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THE THERAPEUTIC USE OF OXYGEN IN CORONARY THROMBOSIS *

ROBERT L. LEVY, M.D.

AND

ALVAN L. BARACH, M.D.

NEW YORK

Sudden thrombotic closure of a coronary branch, with the resultant abrupt interference with the blood supply of the heart, induces an initial state of shock. The degree of functional disturbance that follows depends, in a measure, on the caliber and location of the occluded vessel, as well as on the distribution and anastomoses of the coronary system in the affected individual. If the resulting area of myocardial infarction is large, signs and symptoms of congestive heart failure may ensue. The cardiac action becomes weak, rapid and often irregular. A gallop rhythm may be audible. The blood pressure falls sharply and remains at a relatively low level. Cyanosis appears, and moist râles are heard at the bases of the lungs. Respiration is accelerated and difficult. The picture is one of acute oxygen want due to myocardial insufficiency.

If the heart is not too severely injured and can maintain an adequate circulation during the period of its recovery, the patient survives the attack. Cardiac stimulation by drugs, such as digitalis and caffeine, is usually employed, but its value is problematic and difficult to appraise. Any therapeutic measure that would lighten the burden of the heart and afford it a measure of rest should, *a priori,* be helpful in tiding over the time of stress and promoting restoration of function.

It is known that in patients with congestive heart failure the oxygen content of both the venous and the arterial blood is frequently diminished.[1] Decrease in pulmonary ventilation during the administration of oxygen in cases of cardiac insufficiency has also been demonstrated.[2] Barach and Woodwell [3] observed that the inhalation of from 40 to 50 per cent of oxygen increased both the arterial and the venous saturation in the presence of cardiac failure.

With these facts in mind, we administered oxygen to four patients suffering from the effects of coronary thrombosis. All were critically ill. The oxygen was given by means of a tent,[4] and a concentration of about 45 per cent was maintained for periods ranging from five days to two weeks. One case history will be given in detail:

REPORT OF CASE

H. R., a lawyer, aged 38, with no previous illness so far as he could recall, had been a spasmodic drinker but for two years had not touched alcohol. He had always smoked heavily. There were no cardiac symptoms until two weeks prior to the present attack, when he first noted substernal pain induced by effort, lasting only a few seconds. It recurred a number of times but was never severe enough to cause alarm or require cessation of activity.

On the morning of December 28, while in bed, the patient was awakened at 1:30 by sharp substernal pain, radiating to both arms. About an hour later he vomited. The pain was constant and severe at first but gradually abated, so that no sedative was given by his physician.

He was seen by one of us at his home at 7:45 a. m. His color was ashen. There was moderate cyanosis of the lips and ears, but no dyspnea. Suffering was apparently not extreme. The heart was not enlarged on percussion. The sounds were weak. The rate was 96, the rhythm regular. In the fourth left interspace, close to the sternum, a sharply localized, scratchy rub was heard. The aortic second sound was feeble. The blood pressure was 96 mm. of mercury systolic and 66 diastolic. The lungs were clear. The abdomen was soft and the liver was not enlarged.

A diagnosis of coronary thrombosis was made, and the patient was given morphine sulphate, 0.01 Gm., by hypodermic injection. Two hours later he was removed to the Presbyterian Hospital in an ambulance.

Cardiac pain became more severe and during the first twenty-four hours he was kept comfortable and drowsy by sedatives. The leukocyte count on admission was 19,900, with 84 per cent polymorphonuclears. The Wassermann test on the blood was negative. The temperature rose to 101 F. (fig. 1). The blood pressure level remained unchanged. The heart rate was 100; the rhythm was regular. Digifolin, 0.9 Gm., was administered intramuscularly in three doses at six hour intervals.

The patient passed a comfortable night. At 8 a. m., December 29, the nurse observed that the speech was thick and by 8:30 a. m. he was unable to articulate. Right facial weakness was noted, as well as complete paralysis of the right arm and partial paralysis of the right leg. The pulse was more rapid and thready. The blood pressure was 94 systolic and 75 diastolic. A bit of clot had apparently broken off from an intraventricular thrombus and had lodged in the left lenticulostriate artery.

By 10:30 a. m. the heart sounds had become very weak and a gallop rhythm was heard. The heart rate was 130. Respirations were rapid and labored. There was extreme cyanosis and

* From the Department of Medicine, Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital.

1. Means, J. H., and Newburgh, L. H.: Studies of the Blood Flow by the Method of Krogh and Lindhard, Tr. A. Am. Phys. **30:** 51, 1915. Lundsgaard, C.: Studies of Oxygen in the Venous Blood: II. Oxygen Unsaturation in the Venous Blood of a Group of Patients with Circulatory Disturbances, J. Exper. Med. **27:** 179 (Feb.) 1918. Harrop, G. A.: The Oxygen and Carbon Dioxide Content of Arterial and of Venous Blood in Normal Individuals and in Patients with Anemia and Heart Disease, ibid. **30:** 241 (Sept.) 1919.

2. Beddard, A. P., and Pembrey, M. S.: Observations on Pulmonary Ventilation in Disease, Brit. M. J. **2:** 580 (Aug. 29) 1908. Campbell, J. M. H., and Poulton, E. P.: The Effect on Breathless Subjects of Residence in an Oxygen Chamber, Quart. J. Med. **20:** 141 (Jan.) 1926-1927.

3. Barach, A. L., and Woodwell, M. N.: Studies in Oxygen Therapy with Determinations of Blood Gases: I. In Cardiac Insufficiency and Related Conditions, Arch. Int. Med. **28:** 367 (Oct.) 1921.

4. Barach, A. L.: A New Oxygen Tent, J. A. M. A. **87:** 1213 (Oct. 9) 1926.

profuse perspiration. Moist râles were present at the bases of the lungs. The patient was conscious, though dull. No more digitalis was given because of the possible danger of rupture of the heart. Hypodermic administration of caffeine sodiobenzoate was begun. The patient was placed in an oxygen tent, in which the concentration was quickly raised to 45 per cent.

The cyanosis was promptly relieved by oxygen. Respiration became less labored, though it was at times periodic in character. By afternoon the heart sounds were distinctly stronger. The rate was slower and on the following morning was 84 a minute. He began to talk and to move the right hand. The blood pressure was 98 systolic and 76 diastolic.

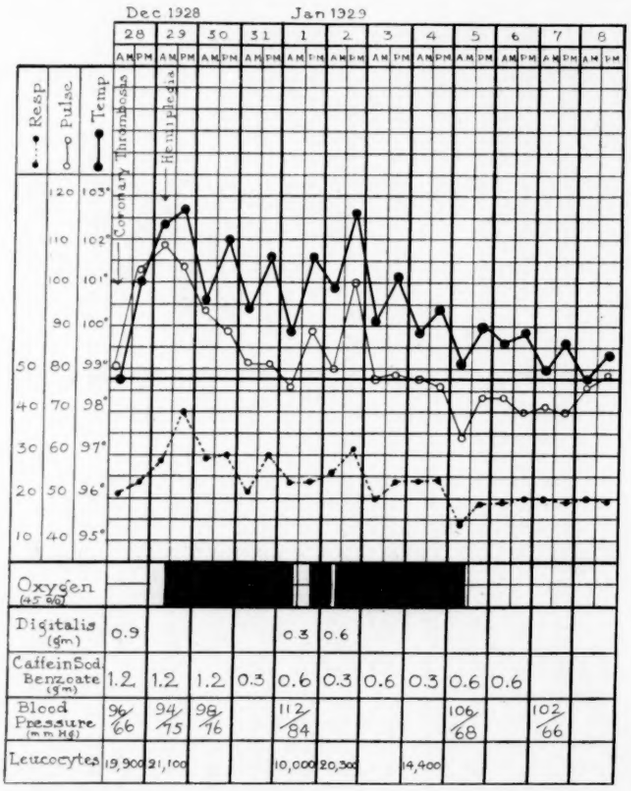
Dec 1928
Jan 1929
28 29 30 31 1 2 3 4 5 6 7 8
Resp
Pulse
Temp
Coronary Thrombosis
Hemiplegia
Oxygen (45 %)
Digitalis (gm) 0.9 0.3 0.6
Caffein Sod. Benzoate (gm) 1.2 1.2 1.2 0.3 0.6 0.3 0.6 0.3 0.6 0.6
Blood Pressure (mm Hg) 96/66 94/75 96/76 112/84 106/68 102/66
Leucocytes 19,900 21,100 10,000 20,300 14,400

Fig. 1.—Clinical chart of patient H. R., showing the relation of oxygen administration to the course of events.

After he had spent four days in an atmosphere containing 45 per cent of oxygen the tent was removed, the concentration gradually having been lowered, over a period of hours, to 35 per cent. Within a short time the cyanosis returned; the heart rate became more rapid, and Cheyne-Stokes breathing recurred. The temperature, which had been falling gradually, again rose to 101.6 F. After a lapse of twelve hours, during which the patient's condition became alarmingly worse, the tent was replaced. There was prompt relief, as evidenced by disappearance of the cyanosis, slowing of the heart rate, return of regular, quiet breathing, and a fall in temperature. When the tent was removed on the following day, the same sequence of events was observed and on this occasion it was put back after half an hour. The circulation was clearly unable to supply the demands of the body unless the inspired air was enriched by additional oxygen.

On the ninth day after the onset of illness and after approximately seven days in an atmosphere of 45 per cent oxygen, the patient was taken out of the tent without the appearance of untoward effects. The temperature remained normal. The heart rate was 74, the respiration 19 and regular. The leukocyte count was 14,400. The blood pressure had risen slightly, being 106 systolic and 68 diastolic. From this time on, improvement was slow but continuous. Speech gradually returned and the patient recovered almost complete use of the right arm and leg.

At the time of his discharge from the hospital, February 18 (seven and a half weeks after admission), there was still a faint gallop rhythm at the apex. The heart rate remained slow and regular. The blood pressure was 112 systolic and 78 diastolic.

Three electrocardiograms which were taken are reproduced in figure 2. They show changes such as are often seen following myocardial infarction.[5] Of particular importance are the appearance of defective intraventricular conduction and alterations in the T waves.

A teleroentgenogram of the heart taken just before discharge showed the size of the shadow to be well within normal limits and its contour not remarkable. There was slight tortuosity of the aorta.

The patient remained at home for six weeks, slowly resuming activity. He then went to Alabama for a prolonged convalescence. He died suddenly in his bath about four and a half months after the onset of his illness.

COMMENT

There was no doubt in the minds of those who saw this patient that it was the administration of oxygen during the time of cardiac weakness that enabled him to live through the initial attack. We have had occasion to try the therapeutic use of the tent in three other patients with coronary thrombosis, all men in the fifth decade of life. In two cases the tent was employed continuously for one week and at intervals for two weeks more. In the third case it was used steadily for five days, then intermittently for a week. Two of these patients died within a short time of a second, rapidly fatal attack—one within three weeks, the other within two months. One man is still alive more than two years after the coronary accident.

In all cases, the following significant observations were made with regard to oxygen therapy:

1. Subjective improvement occurred in from one to three hours after the administration of oxygen was begun. This manifested itself chiefly by relief of respiratory embarrassment and restlessness.

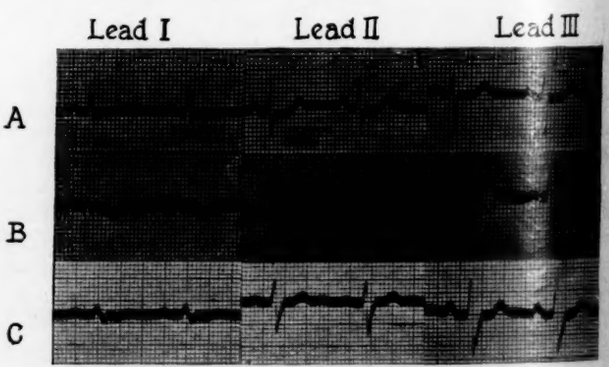

Fig. 2.—Electrocardiograms of patient H. R.: *A*, eight hours after coronary thrombosis; sinus rhythm is present, with moderate left ventricular preponderance; the P-R interval is 0.16 second; the T wave is upright in all leads *B*, fourteen days after the attack; intraventricular block has appeared; the Q-R-S interval is 0.12 second, which is beyond the upper limit of normal; left preponderance is less marked; the P-R interval is 0.15 second; the T wave is sharply inverted in lead I, and higher in lead III; the R wave in lead I is lower and more notched; S_1 and S_2 are notched. These changes afford clear evidence of myocardial infarction. *C*, forty days after the attack; intraventricular block is still present. The T wave in lead I is now slightly diphasic and T_3 is lower; R_1, S_2 and S_3 remain notched; the Q-R-S interval is still prolonged, measuring 0.13 second. The P-R interval is slightly longer, being 0.19 second, though within normal limits. As compared with record *B*, the changes described suggest healing of the myocardial infarct but residual permanent injury to the heart muscle.

2. Cyanosis was diminished or abolished.

3. The respiratory rate was slowed and Cheyne-Stokes breathing, if present, tended to disappear.

5. Parkinson, J., and Bedford, D. E.: Successive Changes in the Electrocardiogram After Cardiac Infarction (Coronary Thrombosis), Heart **14**: 195 (Aug.) 1928.

4. The heart rate became slower. The heart sounds grew stronger and the volume of the pulse improved.

5. Removal of the oxygen tent before satisfactory readjustment of circulatory conditions had taken place resulted in a recurrence of the symptoms and signs just enumerated.

SUMMARY

These cases indicate that anoxemia may play a crucial rôle in determining the outcome after coronary thrombosis. Employment of oxygen therapy (preferably in a concentration of from 45 to 50 per cent) may aid in maintaining an adequate circulation until the heart has had an opportunity to recover from its acute functional disturbance. Obviously, the cardiac injury may be so severe that recovery is impossible. But in some instances, as in the cases here reported, effective use of oxygen may be responsible for the saving of life.

31 East Seventy-Second Street.

ELECTROSURGERY IN THYROIDECTOMY

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Electrosurgery, sometimes referred to as "surgical diathermy" or the "radio-knife," has been used with increasing frequency during the last decade in the treatment of malignant conditions. The use of the actual cautery, of the electric cautery and of the form of electrical surgery known as "fulguration" in far advanced cases of cancer, and even as the operation of choice in early operable cancer by some surgeons, has been a recognized procedure for several decades.

The chief advantage of this method of attack lay in the blocking or sealing of the lymphatics and smaller blood vessels, thus aiding in the prevention of metastases or the escape of carcinomatous cells into other parts of the body during the actual process of cutting into or around the malignant growth. Other advantages noted were the better hemostasis obtained by this method of operating, the freedom from pain after operation, and the absence of shock.

A number of excellent machines generating the form of high frequency current used in this type of surgery have been developed in recent years. I have had the privilege of working in close association with Prof. W. T. Bovie, in the experimental laboratories at Northwestern University Medical School, during the last two years. We have been greatly impressed by the ease and dexterity with which living tissue can be cut away from any part of the body, including even the bony tissue, by means of a properly developed electric current, aided by small electrodes made in the shape of needles, loops, octagons and small spatules. This study was further influenced by the wide experience which Dr. Bovie had had, working with Dr. Harvey Cushing in Boston, in the use of electrosurgery as an aid in the removal of intracranial tumors. This work of Cushing was described recently.[1]

I first used the electrosurgery unit in the radical removal of a breast for carcinoma and now use it altogether for this operation, convinced that it is the safest and quickest method of attack in malignant growths of this location. I have also used it in carcinomas of the tongue, the parotid and the bladder, and in melanocarcinomatous moles.

1. Cushing, Harvey: Surg. Gynec. Obst. 47:751 (Dec.) 1928.

It was only natural when a serious case of thyroid disease, possibly of a malignant nature, came to operation about a year ago that I should turn to electrosurgery as the best means of eradication. The operation was performed under local anesthesia without the least sign of distress from the patient. The complete absence of postoperative toxicosis, the almost complete absence of complaints and the unusually happy convalescence in a serious case all impressed me with the value of this method as an aid in thyroidectomy. I have since used it in fifteen other cases and here submit a first report of thyroidectomy by means of electrosurgery.

The electrosurgical unit designed by Dr. Bovie has the advantage of making instantly available to the surgeon the various currents useful in surgery and delivering them through a single wire or lead into operating instruments of practical design. Other excellent surgical units have also been designed and may have the same or other advantages.

The machine generating a surgical current develops an alterating current of from 1,500,000 to 3,000,000 cycles or oscillations. There is a further mechanism so arranged as to modulate the current (by choking) from a cutting to a cooking current. A purely cutting current does not coagulate, cauterize or cook. A purely cooking

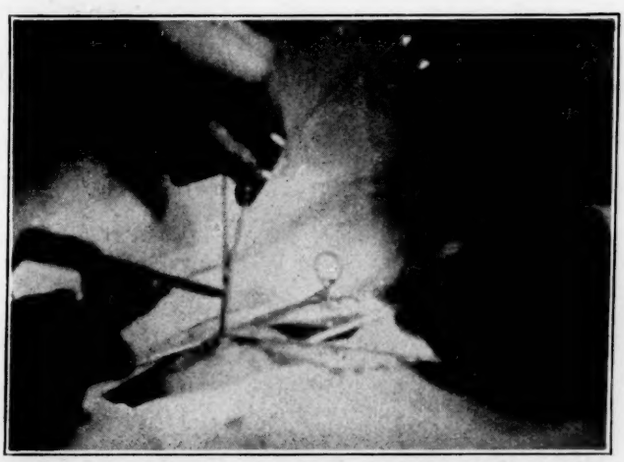

Fig. 1.—A skin incision has been made. Sealing the superficial arteries is being done by passing a current through the hemostat grasping the bleeder.

current does not cut but simply burns its way through the tissues, giving considerable slough. Being able to modulate this current by adding just enough of the cooking current to the cutting current enables one to make an incision as clean cut as though a scalpel were used and at the same time to seal or close the lymphatics and smaller vessels along the margins of this incision.

Professor Bovie describes the physical characteristics of these various currents as follows:

There are three distinct ways in which the various high frequency currents delivered by the unit are used in electrosurgery: (1) superficial dehydration; (2) cutting, and (3) tissue coagulation.

1. For superficial dehydration the active electrode is held not in actual contact with the tissues to be dehydrated but sufficiently close so that sparks are sprayed across the intervening space. The very high temperature of the sparks is sufficient to dehydrate a thin outer layer of tissue completely.

2. For cutting purposes, the active electrode is energized by a different type of current. The cutting is not done by the electrode, which has no sharpened edge, but actually by the current, which forms ahead of the electrode an electrical arc which by volatilizing the tissues separates them as though they

were cut. Further, by a suitable modification (variable amount of damping) of the same current, a greater or a lesser degree of coagulation or dehydration may be produced at will at the edges of the severed tissues. When the tissues are not particularly vascular, the current is so modified as to produce the minimum amount of dehydration: but when the blood supply is greater, the amount of dehydration is correspondingly increased.

The apparatus is provided with control switches so that the active electrode can be instantly energized with the particular

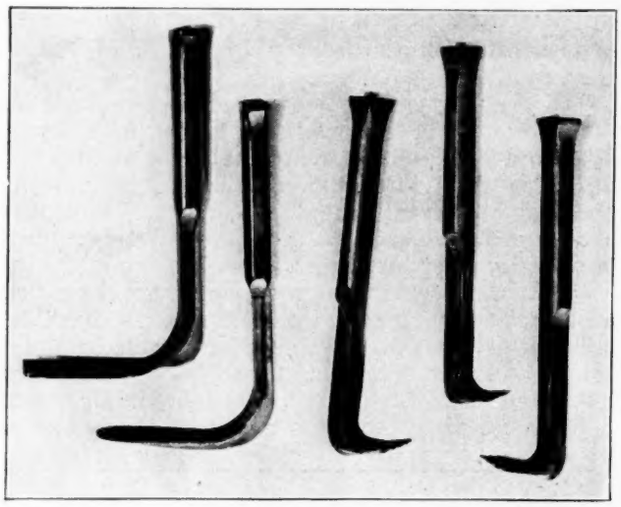

Fig. 2.—The author's hard fiber nonconducting retractors used in electrosurgery.

kind of cutting current which the surgeon requires; for sometimes he wishes a strong current to make deep incisions rapidly, at others weaker currents, by which delicate bloodless dissections may be carried out.

3. For heating the tissues *en masse* (so-called electrocoagulation), the kind of current used differs widely from that employed for cutting. An electrode energized with coagulating currents instead of having cutting properties cannot be moved through the tissues. The tissues surrounding the electrode become heated to a depth depending on two factors, the density of the current and the length of time it is permitted to flow. If a large tissue mass is to be coagulated, a comparatively weak current must be used for a prolonged period, until it becomes heated throughout; for, should a stronger current be used, the tissues in the immediate vicinity of the active electrode would become so quickly dehydrated or even carbonized that the current would cease to flow and the deeper tissues would not be affected. If, on the other hand, a small tissue mass is to be coagulated, one uses a strong current for a brief length of time, so that the surrounding tissues are not affected.

It has been sufficiently emphasized in the foregoing paragraphs that the usefulness of this electrosurgical unit lies in the possibility it offers of varying at will the character of the cutting current so as to secure different degrees of dehydration.

The usual electrosurgical apparatus is provided with a foot control for turning the current on and off. But since it has been found in practice that a foot control limits the surgeon too much to one position, a convenient hand control has been added. This not only gives the surgeon increased freedom of movement but greatly facilitates his coordination.

Because of its shape, the hand control has become known about the laboratory and hospital as the "pistol grip." It consists of a special handle designed to hold the operating electrode, the current being under the control of the surgeon's index finger, which presses a small trigger. A number of operating electrodes have been constructed for special purposes, all of them interchangeable in the pistol grip. For obvious reasons, such accessories as retractors, which the surgeon needs to employ in the operating field, should be constructed out of insulating materials.

THYROIDECTOMY WITH ELECTROSURGERY

The usual skin incision is made in the neck either with a scalpel, the numerous small vessels, which are always cut, being grasped with small hemostats, or with a purely cutting current, the bleeders likewise being grasped with hemostats. When this incision is made with the positive or cutting electrode it must be done quickly and accurately in order to obtain a clean cut incision through the skin. Figure 1 shows the pistol grip with the cutting electrode in the barrel of the pistol and the control of the current by means of a trigger. This is more convenient than the foot control of the current.

The next step is to seal the numerous small bleeders exposed by the skin incision. The assistant in charge of the generating machine changes the switch from a cutting to a searing current and the operator then touches each hemostat in turn with the point of the positive electrode (held in the pistol grip). The current passes down the hemostat and seals the end of the vessel, thus eliminating the use of a ligature. Throughout the entire operation practically all vessels are sealed in this manner instead of being ligated. The usual exception is the superior thyroid arteries, which as a further precaution are ligated as well as sealed (fig. 1).

The assistant next turns the switch back to the cutting current, with a slight cooking current, and the operator proceeds to expose the thyroid gland. The incision is now continued with the cutting electrode down through the platysma muscle, and the skin and the platysma flaps are dissected upward and downward the usual distance. These skin flaps are retracted by small nonconducting retractors made of a hard fiber (fig. 2).

The cervical fascia is now exposed and is incised down the middle (fig. 3). It is then freed by blunt finger dissection or by a Kocker dissector from the capsule of the gland and is retracted laterally along with

Fig. 3.—Incising the cervical fascia with the electric current.

the sternohyoid muscles by nonconducting retractors. When in the case of a very large goiter it is necessary to incise this muscle on one or both sides, this incision is likewise done with the cutting current. In many cases in which the muscles have not been overdistended by a large goiter, thus enhancing the ease of their retraction, it is necessary to make a transverse incision as well as the vertical one and to turn back the four muscular flaps in order to expose the goiter.

The goiter is now mobilized by gently passing a finger round its borders, but no undue traction is used to deliver it into the wound where it can be attached more readily. Clamps are placed on the superior and inferior thyroid arteries, first on the right lobe and later on the left. The gland is now attacked in its superior-lateral aspect, the combined cutting-cooking current being used for dissection instead of the sharp scalpel and hemostats. Occasionally a vessel will bleed and it

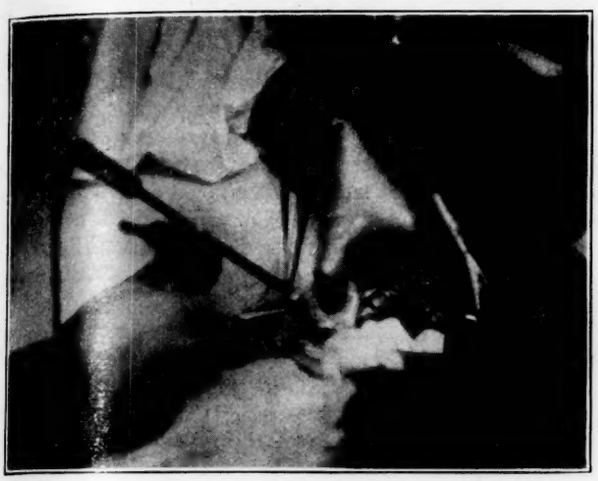

Fig. 4.—Removal of the hypertrophied right lobe by the electric current. Note the almost complete absence of hemostats.

is necessary to grasp it with a hemostat, but as a rule not more than four or five hemostats are employed on each lobe and these, with the exception of the superior thyroid arteries, are sealed by passing a cooking current down the hemostat. Such a small amount of this current is necessary that these vessels are sealed, not coagulated, and there is no area left behind to slough as is the case when tissue is thoroughly coagulated (fig. 4).

Both the procedure advocated so strongly by Crile, of leaving a small layer of gland behind along the lateral margins and a small film of gland tissue across the trachea, and the method advocated by Reinhoff and others, of opening the internal capsule of the gland and dissecting this off the anterior surface of the goiter and then removing the latter by an intracapsular dissection, have been used. When the latter method is employed an effort is made to dissect the capsule away from the gland, retracting it laterally but performing this dissection by means of the electric current rather than by a blunt incision.

The chief purpose of this entire method of attack is to seal not only the blood vessels but the lymphatics just ahead of the incision, thus preventing the escape of the thyroid toxins into the circulatory (blood and lymphatic) system with the subsequent severe reactions not infrequently seen following these operations. Therefore, when the goiter proper is reached every effort is made to avoid the use of scalpel, scissors or blunt dissection. These are replaced by the cutting-sealing electric current, exactly as is done in the case of a malignant growth in which the desire to seal the blood and lymph channels is even more important.

The bed from which the goiter has been removed is now carefully inspected, any bleeding points that appear are sealed with the current, and the remaining edges of the capsule are approximated with plain catgut (fig. 5). A drain of small soft rubber tubing is inserted as a routine. In three cases closure has been effected without drainage, but in one of these there was a considerable collection of serum. In one case a small hemorrhage developed which was readily controlled by pressure dressing. The skin is closed by fine silk sutures and the drain is removed in from twenty-four to forty-eight hours.

ANESTHETIC

The anesthetic of choice in these cases of goiter is 0.5 per cent procaine hydrochloride, used locally. One hour preceding the operation the patient is given morphine sulphate, one-fourth grain (16 mg.), and scopolamine, $\frac{1}{150}$ grain (0.4 mg.). With this anesthetic no precautions need be taken on account of the electrical current.

Nitrous oxide gas may be used without undue fear of an explosion, and ether can be used. In the latter two cases a wet flannel roll is placed just below the lower edge of the mask and further protection against the fumes of the ether reaching the electric spark is provided by a rubber apron placed over the anesthetic frame and held tightly by clips against the skin of the cheeks and chin. If a general anesthetic is necessary, rectal ether anesthesia, as in one of my cases, may be used. In all but one of the cases in this series, local anesthesia was used.

Only fifteen thyroidectomies have been performed by means of the electrosurgical current. The method is still being studied and compared with the immediate and late results in patients operated on by means of the scalpel with the usual technic. All but three of these fifteen cases were extremely severe types of hyperthyroidism with marked loss of weight, rapid, irregular pulse rate, and, in four of the cases, marked involvement of the heart. The basal metabolism rates varied from 35 to 89.

Fig. 5.—Appearance of the wound after closure of the capsule and cervical fascia without drainage.

During the immediate postoperative convalescence, I have marveled at the almost complete absence of pain in every case; at least ten of the patients have been completely free from postoperative complaints. In no case has the temperature been elevated above 101.4 F., this rise occurring in two cases on the second postoperative day. Six of the other cases showed an elevation in temperature to 100 F. on the second and third days, with normal temperatures during the

remainder of the convalescent period. Five patients showed normal temperatures throughout the postoperative period of convalescence.

The basal metabolism rate in all but three of these cases receded to below 10 plus by the end of three weeks. Only one patient showed a high rate four months after the operation. He had a preoperative rate of 59 plus and four months later the rate was 35 plus, although from a clinical standpoint he could be classed as having recovered. One patient in the series had a rate below minus 10, namely, minus 12½.

ADVANTAGES

Although this is too small a series of cases to justify positive conclusions, a few definite advantages are apparent.

1. The time of the operation is definitely shortened by this method through the sealing of the bleeding vessels rather than the use of the time-consuming method of applying ligatures.

2. In every case, even in the most serious with marked cardiac involvement, there has been a complete absence of postoperative shock. One patient was in such extreme condition that his family physician called at the hospital just before the operation and begged both the patient and his wife to forego the operation, stating that he would surely die if submitted to this ordeal; yet the patient made an absolutely normal recovery free from all shock and pain.

3. A convalescence so free from postoperative pain that even the patient remarks about the complete lack of suffering is almost the universal rule. This result, occurring in a group of patients who are usually emotional, given to complaints and often seeking sympathy is especially noteworthy.

4. When one has used the electrosurgical method in the removal of a large number of malignant growths in breasts, tongues, lips and parotid glands, one becomes deeply impressed with the bloodless field, the absence of postoperative shock and the freedom from postoperative pain. The greatest impression, however, and the greatest sense of security lie in the sealing of the blood and lymph channels simultaneously with the incision in and around the malignant growth. The old fear of opening up channels for the escape of carcinomatous cells to other parts of the body is at once eliminated to a great extent.

The same principle holds true in the removal of a very toxic goiter by the electrosurgical method. There has been no case thus far in this small series that has shown the least evidence of a postoperative thyroid toxicosis. It would seem logical to ascribe this to the same sealing of the blood and lymphatic channels, thus preventing the escape of toxic substances from the cut thyroid gland.

I am not yet ready to say that this will be my method of choice in every case of thyroidectomy. I am, however, convinced that it is by far the most rational procedure in all cases of malignant growths susceptible of being attacked by electrosurgery. For the same reasons it would seem an equally rational procedure in malignant conditions of the thyroid or in severe cases of toxic or exophthalmic goiter.

DISADVANTAGES

1. The machine for the generating of this electric surgical current is large and cumbersome and is transported from one hospital to another with great inconvenience. It is an expensive apparatus and therefore will usually be purchased only by surgeons or hospitals interested especially in malignant conditions or by those who may come to recognize its value in thyroidectomies. Its general usefulness is therefore greatly limited.

2. The surgeon must have at hand a carefully trained assistant who understands the mechanism and who can manipulate the various switches that modulate the current from a light cutting stage, through intervening stages, to a heavy coagulating current. Unfortunately there are only a few persons thus far trained to operate this particular machine.

3. It requires considerable experience to use just sufficient current to make a clean-cut incision in the skin that will heal as readily and with as little remaining scar as follows a properly executed scalpel incision. With practice, however, this can be accomplished. If too strong a coagulating current is used in sealing the blood vessels, one may have a greater amount of serum drainage than is the rule when hemostats and ligatures are used. Here, again, experience with the current is necessary to overcome this difficulty.

4. Care must be used not to allow the current to come in contact with a hemostat lying across the skin or a metal retractor; otherwise cooking of the skin or of the tissue under the retractor will follow, to a degree depending on the strength of the given current. This, of course, can be easily avoided.

CONCLUSIONS

1. The value of electrosurgery in the removal of malignant growths of the breast and of other locations where it is possible to attack them by this method has been enthusiastically endorsed by all surgeons familiar with its use. There is no question that this method prevents the escape of carcinomatous cells into the blood and lymphatic streams. It reduces the amount of shock and gives better hemostasis.

2. In thyroidectomies this method prevents the escape of toxic material into the general circulation during the operation, resulting therefore in a convalescence devoid of the severe reaction often seen in these cases. It shortens the operative period by eliminating the ligation of a large number of vessels. It gives a convalescence almost completely free from pain.

3. It has the disadvantages of a cumbersome machine, the need of a trained assistant to manipulate the machine and the added expense of these two items. But in spite of these disadvantages this method should be seriously considered in every case of malignant disease of the thyroid and in extreme cases of toxicity with hyperthyroidism.

122 South Michigan Avenue.

The Origin of Quarantine.—There is one incident in this medieval attempt to prevent plague that has left a mark on our language. The Republic of Ragusa, on the eastern side of the Adriatic, adopted and extended the regulations that had been so successful at Venice. A landing station was established far from the city and the harbor. There incoming suspects had to spend thirty days in the open air and sunlight, and any who had traffic with them were isolated. The period of thirty days was spoken of as the Trentina. Later this was found to be not long enough. The thirty days became forty days, the Quarantina, whence we have the word quarantine. The system of quarantine gradually spread through Europe. It was accompanied by very drastic destruction, by burning, of all goods belonging to the infected.—Singer, Charles: A Short History of Medicine, Oxford, 1928, p. 81.

USE AND REASONS FOR THE USE OF THIOCRESOL TO STIMULATE WOUND HEALING*

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Along with other differences, obviously, there is a chemical difference between the nucleus of a cell in mitosis and the nucleus of a cell in the resting condition. The work of the Research Institute of the Lankenau Hospital has been devoted to detecting what this chemical difference is. Working up from plants, through paramecia, rats, mice and finally man, Hammett[1] has established that, whatever other chemical differences there are, the most important, in fact the essential, chemical difference is a rearrangement of the sulphur in the molecules, so that this element appears in the chemical group sulphydryl; i. e., SH^-.

If this is so, a number of important conclusions immediately follow. For instance, Hammett has examined certain literature to see whether or not clinical observations, experimental facts and current theories of growth by increase in cell number correspond to this chemical finding. He found that they did.[2] He therefore has postulated a working theory of an equilibrium between oxidized and reduced sulphur. Furthermore, if the one form stimulates mitosis, as he has shown that it does, it follows from the law of mass action that the other form inhibits mitosis. The matter can be stated succinctly thus: The instant a wound is made, say a cut through the skin, cells begin to divide and continue to multiply until the wound is healed. The law of mass action states that a chemical reaction is slowed and finally brought to a standstill by the products of the reaction. If the sulphydryl radical is the stimulus to cell division,[3] the products of the reaction of sulphydryl (with oxygen, etc.) should stop it. That is, the products accumulate and stop mitosis by the time the wound is healed. This interesting conception now has rigid experimental proof.[4]

Therefore, among other things which emerge from this work is the fact that sulphur in a proper form will stimulate wound healing, and this was first demonstrated in rats.[5] The first compound tried on man was thioglucose.[6] Expectations were realized, and this substance did stimulate the healing of old wounds. A disadvantage was the fact that it likewise stimulated bacterial growth, as was to be expected.[7] At Hammett's suggestion, as recorded in the first clinical report,[6] the SH^- group attached to cresol was then tried, first on animals[8] and then on wounds in man. The idea was that the splitting of this very labile compound would liberate a small amount of cresol, which would tend to inhibit bacterial growth. The report presented here is of this work. Since our interest is growth by increase in cell number, it will be realized that this phase is merely a part of our direct program. The fact being established, however, leads us to present the subject to clinicians who may be interested in examining other SH^- compounds, and in discovering what perhaps may be more advantageous ways of their application. Its biologic importance is to add more evidence of the validity of the views developed in the papers previously cited.

Fig. 1.—Bed sores: The larger one was treated with thiocresol, with the result illustrated within three weeks. The dotted line shows the extent of the ulcer when treatment was begun. The shaded granulations are higher than the surrounding skin level. They are reduced in height by the application of silver nitrate or other convenient means. The smaller ulcer over the trochanter is of the same age. No attempt was made to heal this ulcer.

The preparation of *p*-thiocresol obtained from the Eastman Kodak Company is insoluble in water but soluble in alcohol. A hundredth gram was dissolved in about 5 cc. of 95 per cent alcohol, to which was then added 100 cc. of distilled water, making a solution of 1:10,000. This concentration was agreed on from the results obtained in the stimulation of mitosis in plants and lower animals, although it is not certain that this is the optimum for mitosis in man. It was applied as a wet dressing to a number of stubborn wounds.

REPORT OF CASES

CASE 1.—A single man, aged 23, four days before admission, after an outing at the seashore during which he spent a large part of the time swimming in the ocean, was seized with mild lower abdominal pain. Two hours later he developed sudden weakness in both legs. He went to bed late in the afternoon, and by the next morning both legs were paralyzed. Catheterization was necessary and there was no control of the anal sphincter. Examination on admission showed flaccid paralysis of both legs from the knees downward, with absence of temperature and pain perceptions. The patellar, achilles and

* From the Research Institute of the Lankenau Hospital.

1. Hammett, F. S.: The Chemical Stimulus Essential for Growth by Increase in Cell Number, Protoplasma **7**: 297-322 (Aug.) 1929.
2. Hammett, F. S.: An Interpretation of Malignant Growth Based on the Chemistry of Cell Division, Arch. Path **8**: 575-594 (Oct.) 1929.
3. Wounding the surface cells of a root tip of zea mays by scratching with a fine needle instantly elicits the chemical reaction of the sulphydryl group, as demonstrated microscopically in a hollow ground slide containing the root tip and the appropriate chemical reagents (Protoplasma **7**: 317, 1929).
4. To be published in detail by Hammett in Protoplasma.
5. Hammett, F. S., and Reimann, S. P.: Cell Proliferation Response to Sulphydryl in Mammals, J. Exper. Med. **50**: 445-448 (Oct.) 1929.
6. Reimann, S. P., and Hammett, F. S.: Cell Proliferation Response to Sulphydryl in Man, Proc. Soc. Exper. Biol. & Med. **27**: 20-22, 1929.
7. Apart from the theoretical considerations in the work described here, the reader is referred to Dubos (J. Exper. Med. **50**: 157 [Aug.], 1929), who states, after considering pneumococcus-dextrose systems and their reducing tendencies, that the thiol groups are essential for the growth of the organism. The reason is now quite clear from reference 1 in this paper.
8. Reimann, S. P.: Proliferation of Rat and Mouse Epithelium from Sulphydryl, Protoplasma, to be published.

Babinski reflexes were absent. The cremasteric and upper reflexes were normal. The temperature was 104 F. A retaining catheter was inserted and the patient was treated symptomatically for transverse myelitis. He developed a huge bed sore over the lumbar and sacral regions and, shortly afterward, another decubitus ulcer over the right trochanter and one on each heel. He was placed on the ventral surface on appropriate pads, and the bed sores were treated by various standard methods, such as painting with mercurochrome or keeping the area dry. After the first rapid spread, the progress was slowed but continued until slight return of function appeared in both legs. The ulcers then ceased to enlarge but also showed no evidence of healing. Application of a suspension of pepsin and a judicious use of the scissors cleaned out the necrotic parts. For another two weeks there was neither progression nor healing of the ulcer. Then, the 1:10,000 solution of thiocresol was applied to the larger of the two ulcers. At this time the depth varied from 1 to 2 cm. The edges were dusky red, sharp and undermined, in some places

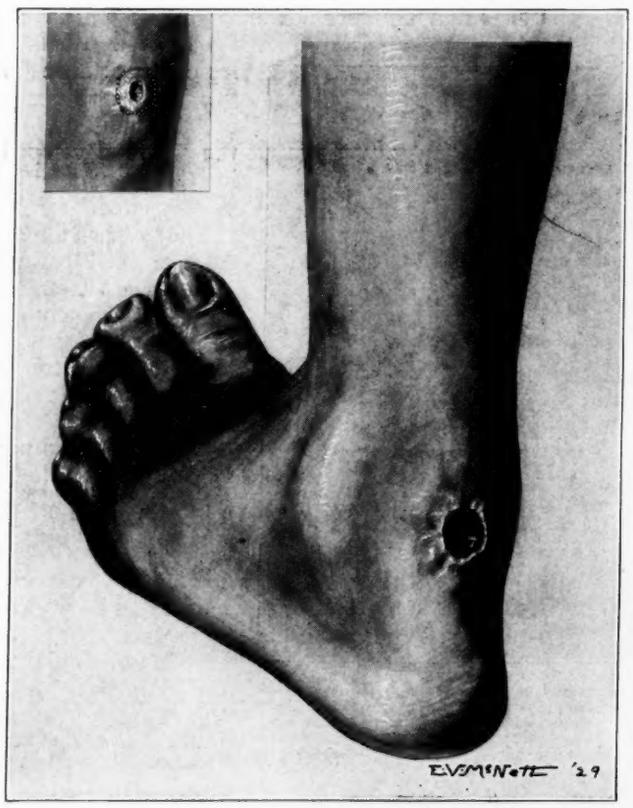

Fig. 2.—Ulcer over the achilles tendon of about six months' duration. Thiocresol solution was applied for forty-eight hours. The inset shows the result.

to a depth of 3 cm. There was no evidence of granulation in the depths or of epithelial growth on the edges. There was little surface pus. Crumpled gauze soaked in the thiocresol solution was laid in the wound and under the overhanging edges. The gauze was kept moist for forty-eight hours by the application of the solution with a medicine dropper.

The smaller ulcer over the right trochanter and the ulcers on the heels were used as a sort of control and were treated with a variety of standard substances.

At the end of forty-eight hours, fresh, healthy granulations had appeared everywhere in the base of the larger wound. The undermined edges had grown tight practically all round the circumference and the previously sharp edges of skin had become broken and irregular from the outgrowth of new cells. Treatment with thiocresol was then stopped for two days, gauze moistened with physiologic solution of sodium chloride being applied to the wound. Then the thiocresol treatment was again instituted for forty-eight hours, whereupon another distinct spurt in healing was detected. These alternate procedures were continued, each time a result being obtained, until at the end of three weeks the ulcer appeared as shown in figure 1. Meanwhile the smaller wounds made no progress. Thiocresol was then applied to the wound over the trochanter and the same spurt of healing was observed.

CASE 2.—A man, aged 28, suffered a comminuted fracture of the left femur in May, 1929. He was treated by extension and casts, and at the end of two months a good functional result was obtained. A pressure ulcer, however, developed over the achilles tendon which, in spite of numerous and varied treatments, refused to heal. November 26, thiocresol was applied, the patient being instructed to keep the dressing moist and the leg elevated. Two days later each dimension of the wound was exactly one-half the former size. Treatment was discontinued, and the patient was on his feet continually during the day for a week on account of family affairs. Practically no progress in healing was made during this time. He then returned, thiocresol was again applied for forty-eight hours and again a spurt was noticed. The wound was practically healed to a small scab within sixteen days after the first application (fig. 2).

In five more cases, all old varicose ulcers of the leg, the same treatment was instituted with the same result in each case.

COMMENT

Thiocresol therefore stimulates mitosis. That it is the SH^- radical of the compound which is the effective agent is clear from rigidly controlled animal work in which plain cresol (i. e., the same chemical base minus the SH^- radical) was used and from the results obtained with many compounds containing the SH^- group and their homologues containing other groups.[1]

Among the considerations that will contribute to success or failure in the use of these SH^- compounds, the following may be mentioned:

1. As expected, granulations grow faster than epithelium; in fact, the granulations grow so luxuriantly that they "flow over" the edges. This was remedied by carefully destroying the exuberant tissue with a stick of silver nitrate and then dissolving the débris by applying a suspension of pepsin [9] for about two hours. After the wound has been washed with physiologic solution of sodium chloride, further applications of thiocresol are made. Thus the epithelium is continuously stimulated and allowed to grow unhindered while the granulations are kept at the proper level.

2. Surface pus, so abundant when thioglucose was used, was encountered in much less quantity when thiocresol was used. In fact, all except two of the wounds were perfectly "clean."

3. It is well known that, the more rapidly cells divide, the smaller they are. Hammett [10] has shown that this is also the case on stimulation with sulphydryl compounds. It was thought therefore that, if continuous stimulation was applied, the new cells dividing so rapidly would become smaller and smaller and thus produce "poor healing." Consequently the applications were made at intervals, with time out to give the new cells opportunity to grow in size. Apparently it is best to stimulate wounds with sulphydryl compounds in periods of approximately forty-eight hours' duration. In between, simple dressings, such as physiologic

9. The pepsin preparation that has been in use for many years at the Lankenau Hospital consists of:

	Gm. or Cc.
Pepsin	50.0
Diluted hydrochloric acid	20.0
Menthol	0.5
Eucalyptol	0.5
Alcohol	10.0
Glycerin	50.0
Distilled water sufficient to make	1,000.0

10. Hammett, F. S.: Cell Division and Cell Growth in Size, Protoplasma **7**: 535-540 (Sept.) 1929.

solution of sodium chloride, answer every purpose. It was thought at first that a wet dressing of dextrose solution would provide easily assimilable nutrition for the cytoplasm of the cells, but such dressings stimulate bacterial activity to an excessive degree and this is a hindrance to healing.[11]

4. The solutions must be freshly made. All of these compounds are very labile chemically and when the sulphur changes from the SH^- to the $S.S^-$ form, either no effect at all is observed or there is actual inhibition of healing. The reason for this lies probably, as already stated, in the law of mass action. The formation of a precipitate in the thiocresol solution is a guide to its effectiveness. The chemical basis of this precipitate is under consideration at present for obvious reasons.

5. All SH^- compounds have a disagreeable odor. All of our patients objected to it at first but soon became accustomed and indifferent to it.

6. No data are available relative to the effect of the SH^- compounds on the rate of "normally" healing wounds in man. All of the wounds have been picked for their general stubbornness and poor condition. In rats, however, "normally" healing wounds are stimulated.[5]

SUMMARY AND CONCLUSIONS

The naturally occurring chemical radical (SH^-) which stimulates mitosis has been discovered. Advantage is taken of the chemical group sulphydryl, SH^-, to stimulate the healing of wounds. Methods have been evolved for the application of these substances clinically.

Corinthian and Girard Avenues.

TREATMENT OF THE RESPIRATORY PARALYSIS OF POLIOMYELITIS IN A RESPIRATORY CHAMBER

REPORT OF THREE CASES, WITH ONE RECOVERY *

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AND
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Respiratory paralysis is the most frequent cause of death in acute poliomyelitis. We have treated three of these cases in the Drinker respirator, with one recovery. So far as we know, this is the first reported recovery in a case in which the paralysis was severe enough to cause death without artificial respiration. The machine used is a modification of the apparatus described last spring by Drinker and McKhann,[1] and by Drinker and Shaw.[2] The three case histories follow.

REPORT OF CASES

CASE 1.—B. H., a Harvard college student, aged 21, was admitted to the medical service of the Peter Bent Brigham Hospital, Sept. 13, 1929, as an emergency patient. Five days before he had awakened feverish with a headache and a slightly stiff neck. Two days later he began to notice weakness of his left arm and leg. A lumbar puncture showed increased pressure and a cell count of 80. He was given convalescent serum, both by the intravenous and by the intraspinal routes, by Dr. Kramer of the Harvard Poliomyelitis Commission. The next day the patient first noticed difficulty in breathing, and the weakness of his arms and legs had increased. On the fourth day the intercostal muscles were paralyzed and there was more difficulty in breathing. On the fifth day the abdominal reflexes disappeared, and he was entirely paralyzed from the neck down except for a few feeble movements of his hands; breathing was very difficult. By afternoon he was breathing in short gasps, the accessory muscles of respiration in the neck standing out with each breath. His condition was desperate. He was rushed to the hospital and on arrival was placed immediately in the Drinker respirator. When he was taken out of the machine the following morning his breathing was so weak that after only three or four minutes it became very labored and he begged to be put back. It was evident that he could not live without the aid of the respirator. For the next few days his breathing when outside the respirator remained about the same. The temperature and pulse, which had been slightly elevated on admission, came down to normal on the fourth day in the hospital, and the patient was beginning to move his arms, legs and feet slightly. On the sixth day his breathing outside the machine was distinctly easier, and it was felt that the worst of the paralysis had been passed safely.

Our greatest concern had been the danger of hypostatic congestion and bronchopneumonia. To prevent these the patient was removed twice each day from the machine in which he lay on his back, and was turned on his stomach and put back in for about half an hour. A proficient team was developed to effect this change rapidly, but even so during the first few days the patient frequently became extremely dyspneic and begged to be returned quickly. Frequent periods of hyperventilation, while in the machine, were also given. Auscultation over the chest on repeated occasions failed to show râles in the posterior portions of the lungs, and a portable x-ray film on the fifth day showed no evidence of congestion. Eating, drinking and sleeping were accomplished easily and comfortably with the respirator running. The problem of urination was met by passing a urinal through a porthole in the machine.

The slow recovery of the respiratory muscles was followed by taking the patient's vital capacity. This was begun on the sixth day, when it was 900 cc. On the tenth day it had reached 1,120 cc. On that day the patient remained out of the machine for twenty minutes. Toward the end of this period, respiration became very labored and perspiration appeared on his face from the effort of breathing; yet even then he was more comfortable than he had been a week before after five minutes outside the respirator. On the fourteenth day the patient was comfortable for half an hour outside the machine and might have remained out longer if necessary. We believed that the most complete recovery of the respiratory muscles would occur if they were rested as much as possible at this stage, as the limb muscles recover best if complete rest is given while the muscles remain tender. The patient's peripheral muscles were still quite tender, and presumably a similar neuronitis persisted in the phrenic nerves, so for the next two weeks the periods outside the respirator were limited to half an hour twice a day. Finally, October 10, the twenty-eighth day in the hospital, he was permitted to remain out of the machine overnight. The next morning he was comfortable and showed practically no diminution in vital capacity. He was allowed to remain out of the respirator for the next six weeks except for one hour periods twice each day, when he was returned, in order that the lungs might be hyperventilated and any possible congestion cleared up. The tenderness of the arm and leg muscles persisted an unusually long time, and not until the seventh week in the hospital was any motion of the arms or legs encouraged. The patient was discharged, December 3, after eleven and a half weeks in the hospital, during four of which he lived constantly in the respirator and during six more of which he was in the respirator two hours a day. He was slowly regaining the use

11. Carrel, A., and Hartman, A.: The Relation Between the Size of a Wound and the Rate of Its Cicatrization, J. Exper. Med. **24**: 429 (Nov.) 1916.

* From the Medical Clinic of the Peter Bent Brigham Hospital.

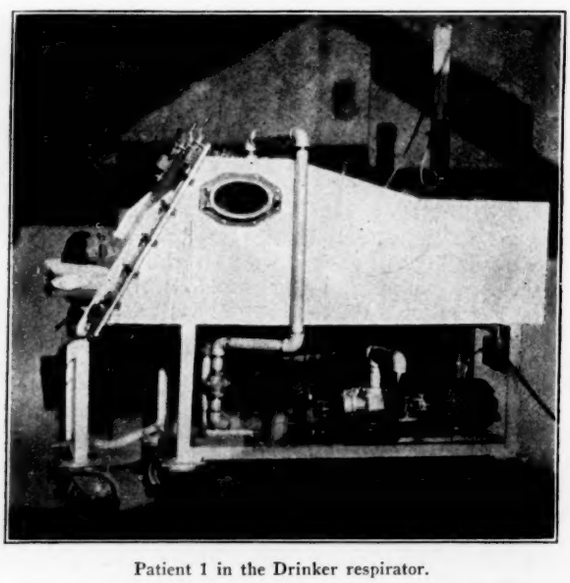
1. Drinker, Philip; and McKhann, C. F.: The Use of a New Apparatus for the Prolonged Administration of Artificial Respiration, J. A. M. A. **92**: 1658-1660 (May 18) 1929.

2. Drinker, Philip; and Shaw, L. A.: An Apparatus for the Prolonged Administration of Artificial Respiration, J. Clin. Investigation **7**: 229 (June) 1929.

of his arms and legs, and the orthopedic consultant believed that eventually he would walk without braces or crutches. At the time of discharge his vital capacity had reached 1,950 cc. and his breathing while at rest showed no effort and appeared entirely normal.

CASE 2.—L. C., a white woman, aged 26, brought to the hospital, Oct. 16, 1929, had been taken sick with headache, fever and a slightly stiff neck five days before. Two days later she vomited. Two days after this, while in the Boston City Hospital, it was noticed that her left leg was paralyzed and her right leg was weak. That evening her right leg was paralyzed and a lumbar puncture showed 650 cells, about 80 per cent of which were lymphocytes. Her temperature at that time was 100.2 F. At 10:30 p. m. difficulty in breathing was noticed, and shortly thereafter she was using the accessory muscles of respiration. She was immediately transferred to the Peter Bent Brigham Hospital.

Physical examination showed cyanosis, with fever and elevated pulse and respiration. The right arm was weak, the abdominal muscles were tense, the knee jerks were absent, and both legs were paralyzed. The remainder of the examination was essentially negative. The leukocyte count on admission was 15,000. After about twenty minutes the patient became much more cyanotic and dyspneic, and she was placed in the Drinker respirator. Twenty hours later she could



Patient 1 in the Drinker respirator.

remain out of the machine only one and a half minutes before becoming very cyanotic. Thirty-six hours after admission the muscles of swallowing were paralyzed, and after only thirty-seven seconds outside the respirator she had to be returned immediately. Throughout that day she was drowsy and groaned occasionally; her eyes were staring. That evening she was given fluids by rectal drip. The pulse rate and temperature rose, and she gradually lapsed into unconsciousness. Oxygen was of no avail. In spite of the fact that the respirator was working at its maximum capacity her breathing became weaker, and loud râles of pulmonary edema were audible above the hum of the machine. At about 4 a. m. one felt certain that life had ceased. The pupils did not react and instead of being cyanotic she was pale. With each excursion of the manometer, however, her mouth would open slightly and her chin would drop down as if she were breathing. In ten minutes she was taken out of the machine; she was dead and apparently had been dead for some minutes.

Autopsy revealed scattered areas of bronchopneumonia throughout all the lobes of the lungs. There was no trace of pulmonary emphysema. The spinal cord showed marked edema in the upper and lower thoracic and cervical portions, with obliteration of the normal structures.

CASE 3.—H. P., a student, aged 18, admitted to the hospital, October 27, 1929, at 12:50 a. m., had been in bed a week with acute bronchitis seven weeks before admission, and from that time had had a bad cough and had raised a moderate amount of mucopurulent sputum. About noon two days before admission he first noticed slight dizziness, which became worse as the day progressed. In the evening he was feverish and chilly. That night he was unable to sleep, was very restless, and at 1 o'clock the next morning complained of a stiff neck. During the following day his neck became stiffer, and he was extremely restless. His temperature throughout the day was about 101 F. He slept fitfully that night. At 4 a. m. he was unable to move his left arm, and at 6 a. m. his right arm was paralyzed. It was noticed later in the morning that he was using his neck muscles to help his breathing, and by evening he complained of inability to cough up mucus which had collected in his throat. Later in the evening his neck was markedly retracted, and his breathing was very labored. He was seen at this time by Dr. Aycock of the Harvard Poliomyelitis Commission and sent directly to the hospital.

Immediately on admission to the hospital the patient was put in the Drinker respirator because of his marked cyanosis and labored respirations. Therefore only the briefest of physical examinations was done, revealing almost complete paralysis of both arms and the right leg, but only slight weakness of the left leg. His color became much better after he had been in the respirator for a few minutes. At first he tried to breathe against the machine, but he soon became accustomed to it and dropped off into a restless sleep.

The following morning his color was slightly improved but he became quite cyanotic if the machine was stopped for only thirty seconds. At noon he was changed from one respirator to another, and in that short time cyanosis became very marked. By this time he had developed inability to swallow, and he was raising considerable amounts of frothy sputum. In the early afternoon his cyanosis increased, even though the respirator was run at its capacity. He was given oxygen by means of a special oxygen helmet without improvement, so the oxygen treatment was stopped. During the evening his pulse became weak and rapid (150-170), and the frothy sputum increased. He dozed most of the time and when awake kept mumbling pointlessly. He was incontinent of urine and feces. His color the second morning was fair but by noon was cyanotic and could not be improved by running the machine to its limit. He began having convulsive movements of the face and was obviously in great distress; at 3:35 p. m. he died.

Postmortem examination showed extensive bronchopneumonia of the dependent portions of the lungs, involving four fifths of the entire lung parenchyma. The crepitant portions of the lungs against the anterior chest wall showed extreme emphysema, which had ruptured through some of the alveoli and followed down along the blood vessels to the mediastinum. The spinal cord was swollen with some pouting when the meninges were cut across. There were tiny hemorrhages in the region of the anterior horn. Both swelling and hemorrhage were most marked in the cervical cord.

THE RESPIRATOR

The Drinker respirator was devised by Philip Drinker of the Harvard School of Public Health. It consists essentially of an air-tight tank connected to an electrical slow speed blower such as is used in ventilators. The pressure end of the blower and its suction end are alternately connected to the tank by means of an alternator valve. The patient's body lies within, and his head projects through an air-tight rubber collar in the end of the tank and is outside. The alternate negative and positive pressures within the tank suck air into the patient's lungs and force it out. A surprisingly low pressure is necessary to do this, 20 cm. of water change in pressure having been ample in case 1. In cases 2 and 3 the maximum negative pressure of 40 cm. of water was used part of the time. By means of valves in the positive and negative pressure pipes, pressures within the tank can be regulated. A water manometer on top of the tank measures the

pressure within. We found that negative pressure is much more comfortable and more easily borne than positive pressure, so negative pressure alone was used in these cases. The patient lies on a narrow bed consisting of springs and a mattress fastened to the end of the tank through which his head projects. To remove the patient, this end is simply pulled out like a desk drawer. Before the patient is removed from the tank, hyperventilation is carried out to produce a temporary apnea and thus lengthen the time out of the respirator before severe dyspnea develops. A stoppered hole in the top of the tank makes it possible to give enemas, rectal drips and hypodermoclyses while the machine is running. An electric light within the tank and portholes in the top and side enable the patient's body to be observed. When respiratory paralysis is severe, the patient's artificial breathing in the tank simulates normal breathing remarkably.

COMMENT

In the past, in certain cases of poliomyelitis with respiratory paralysis, it seemed possible that recovery of the respiratory muscles might occur if the patient could be tided over the acute period of paralysis. The fact that paralysis of deglutition occurred in certain cases of bulbar poliomyelitis, but cleared up quickly and completely in a short time, lent support to this hope. Numerous attempts were made to carry the patient over this acute stage with manual artificial respiration. Some of these cases were spectacular and gained newspaper notoriety. Petrén and Sjövall [3] reported in 1926 a case of poliomyelitis with respiratory paralysis treated in an artificial respiration machine designed by Thunberg, but the patient died. Finally last spring Drinker and McKhann [1] reported a fatal case of poliomyelitis treated in the Drinker respirator, death being due to pneumonia. Case 1 reported in this paper for the first time fulfils the hope held in the past that recovery can take place in respiratory paralysis if the acute stage is tided over by artificial respiration.

In our two fatal cases, and in the case reported by Drinker and McKhann, death resulted from pneumonia. Evidently pneumonia is the chief cause of death when life is prolonged by artificial respiration. To prevent its development the patient must be placed in the respirator early enough, and the lungs must be kept clear of hypostatic congestion in the respirator by frequent turning and frequent hyperventilation. The part played by the respirator in the marked emphysema found at autopsy in case 3 is impossible to determine. Case 2, in which the full capacity of the machine was also required for a number of consecutive hours, showed no trace of pulmonary emphysema.

The great advantages of the Drinker respirator over any other method of prolonged artificial respiration are apparent. To care successfully for an adult patient in this machine, a team of four men is necessary to remove the paralyzed patient, turn him and replace him rapidly. Adequate nursing care is essential. The use of this method of treatment therefore is limited primarily to hospitals.

3. Petrén, K., and Sjövall, E.: Eine Studie über die tödliche akute Form der Poliomyelitis, Acta med. Scandinav. **64**: 260, 1926.

SUMMARY

Of the three cases here presented of poliomyelitis with respiratory paralysis treated in the Drinker respirator, case 1 is the first reported instance of recovery from poliomyelitis with respiratory paralysis severe enough to require artificial respiration.

Bronchopneumonia is a frequent complication and its prevention is most important in the treatment of respiratory paralysis.

SUBMUCOUS FIBROSIS OF THE BLADDER OUTLET IN INFANCY AND CHILDHOOD *

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Submucous fibrosis of the vesical outlet is characterized by sclerotic atresia of the orifice and in children is congenital. The pathologic changes produced in the urinary tract as well as the clinical symptomatology and manifestations are directly the result of urinary obstruction. In most instances, infection accelerates the destructive process. Removal of the blockage and the institution of free urinary drainage constitute the treatment. Medical therapy alone is wholly inadequate. Seven cases of this condition that I have studied are herewith reported together with a brief consideration of the clinical observations and surgical treatment in this type of disease. In one of these patients, an infant, aged 18 months (case 3), the diagnosis of congenital fibrosis of the bladder neck seemed the correct one but lacked cystoscopic proof.

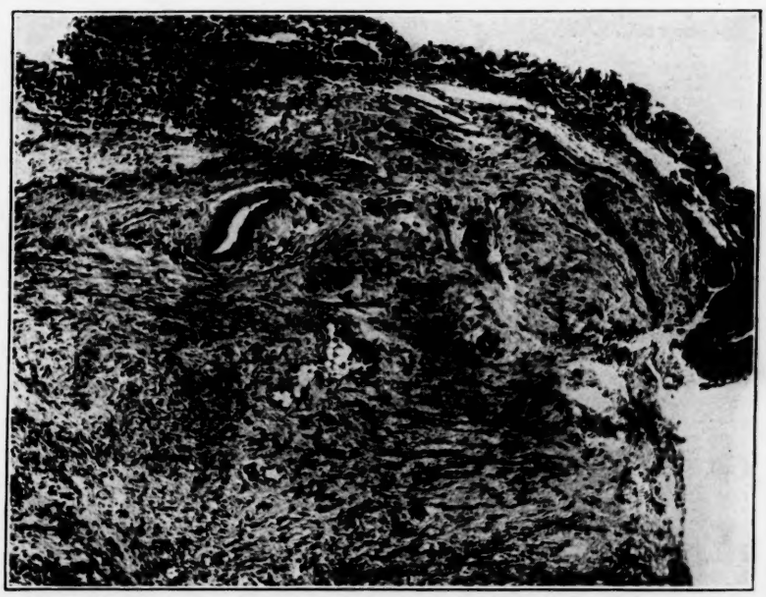

Fig. 1.—Microscopic appearance of submucous fibrosis of the vesical outlet. Noteworthy is the replacement of the normal submucosal structure by scar tissue. The mucosa is fairly well preserved. This section is from tissue removed by suprapubic punch excision in case 2. Excised prostatic tissue in this case was histologically normal.

To date no instance of submucous fibrosis of the vesical outlet has been observed in young females. In all probability the anatomic relationship of the prostate

* From the Children's Medical Division, the Departments of Urology and Pathology, Bellevue Hospital, and the Pediatric Service of the New York Nursery and Child's Hospital.

to the vesical outlet influences this apparent sex preference even though evidence of chronic prostatitis is lacking. That the lesion is rather common may be deduced from the relative frequency of its appearance in adult males in whom the urinary symptoms of the obstruction date from earliest childhood. In twenty (5.6 per cent) of 355 cases of bladder neck fibrosis in adults studied by Young, the history indicated the the lesion was congenital.[1] There is, however, no reliable guide to the true index of incidence because most of the many occurrences of the disease in childhood are unrecognized. I have been able to find only twelve cases of this lesion in children reported in the literature during the past fifteen years; this is indeed a false clue to the actual incidence. With the subjection of children to complete urologic examination when chronic pyuria, enuresis, urinary difficulty or evidence of chronic urinary retention is present, a far greater number of these cases will be revealed.

The age at which symptoms are first manifested varies greatly and depends on the relative degree of urinary obstruction. Frequency is usually present from birth, while urinary difficulty with arduous straining may not appear until the second or third year of life or even may be delayed until the second or third decade. The ages of the patients of this series are indicated in the accompanying tabulation.

1. Young: Urology, Philadelphia, W. B. Saunders & Company 2: 502.

ETIOLOGY

The etiology of bladder neck fibrosis in children is unknown. In all cases in childhood reported to date, the disease was congenital; the obstructive symptoms dated from early infancy. In adult males a lesion, clinically similar, is of rather common occurrence but in most of these, previous lower urogenital infection (cystitis, prostatitis, posterior urethritis) helps to explain the sclerotic process. One knows from the history in many adult cases, however, that the fibrosis was congenital, and, with the increasing atresia of sclerosis, the symptoms have been intensified during the passing years. In view of the severe destructive uropathy that often follows failure to recognize the disease and to treat it properly when it is present in childhood, the importance of early diagnosis and correct surgical treatment is at once apparent.

PATHOLOGY

Histologically the lesion is characterized by a great increase in connective tissue in the submucosa of the vesical outlet (figs. 1 and 2). This fibrosis not only may involve a portion of the sphincteric ring but often extends far into the trigonal musculature as well as into the adjacent bladder wall. Coursing through this sclerotic mass one finds bundles of smooth muscle fibers which are, in some instances, invaded by an excess of connective tissue or may be surrounded by dense fibrous sheaths. Round cell infiltration is usually

Summary of

Case* and Age	Complaint and History	Gastro-Intestinal Upsets	Fever	Pyuria	Phenol-sulphon-phthalein %†	Non-protein Nitrogen	Creatinine	Physical Examination	Cystogram
1 2 yr.	Frequency, dysuria, pyuria many months; occasional hematuria; always sick; suprapubic pain for several months	+	+	++++	5/20 2½/10	44.5	2.2	Distended bladder, undernourished, urine grossly purulent; click on steel sound passed to bladder; residuum, 2 ounces	Stone (2 by 3 cm.) in large diverticulum of bladder dome; position of sac suggests diverticulum developed in urachus; no ureteral reflux
2 3 yr.	Dysuria, frequency, pyuria since birth; marked straining on urination; pains over bladder and both loins	+++	++	++++	1.5 0 0	90	3.1	Distended bladder, both kidneys palpable, child sick, clinically uremic; catheter made to pass bladder outlet only after considerable difficulty; residuum, 6 ounces	Irregular bladder with bilateral ureteral reflux to renal pelves; ureters six times normal size; diverticula seen cystoscopically not well defined in cystogram
3 18 mo.	Acute retention day of birth with marked difficulty in voiding since; pyuria, frequency, enlarged abdomen; clinically uremic on admission to the hospital	++	+	++++	0/0	94.8	3.4	Anemic, uremic, bladder distended to umbilicus; both ureters and kidneys palpable; catheter stopped at bladder neck but finally made to enter bladder; 28 ounces in bladder after evacuation, of which 8 ounces more was milked down from ureters and renal pelves	Greatly dilated irregular bladder; bilateral reflux to each kidney; pelves eight times normal size; ureters enlarged four times
4 14 yr.	Cannot void without great straining; nocturia, frequency, pyuria since birth	0	++	++++	30	28.5	1.4	Distended bladder; kidneys and ureters not felt; prostate normal; residuum, 15 ounces	Large irregular bladder with diverticulum of left lateral wall; trabeculated bladder; no ureteral reflux
5 7 mo.	Pyuria, dysuria, frequency, "chronic pyelitis" since birth	++	++	++++	..	....	...	Distended bladder, pyuria; kidneys not felt; child appears very sick	Somewhat enlarged irregular bladder; no ureteral reflux
6 8 mo.	Dysuria, frequency, pyuria; enlarged bladder since birth	+	++	++++	42	....	...	Bladder distended; both kidneys palpable; anemia; acutely ill	None
7 3 mo.	Fever, pyuria, dysuria since birth	++	++	+++	..	....	...	Distended bladder, pyuria, kidneys not felt	None

* All the patients were boys. † Two hour test.

observed and, in the event of active inflammation, polymorphonuclear cells may be found also. It is noteworthy that the concomitant changes frequently seen in the glandular tissue of the prostate and subtrigonal glands of adults are lacking in children.

Anatomically the fibrosis may involve the entire circumference of the vesical outlet or only a portion of it. In the latter instance the lower segment, that corresponding roughly with 5 to 7 on the face of the clock, is most often the site. Sclerosis here produces a form of median bar obstruction. Rarely the anterior segment may be involved. In most cases the trigon shows muscular hypertrophy.

vesical obstruction. Vesical hypertrophy and dilatation of the ureters and renal pelves are commonly found. In some instances the ureters are as large as the colon and palpable. The kidneys are both architecturally and functionally altered and in some instances totally destroyed. Diverticulum and stone formation in the bladder are frequent complications. The former occurred in four of my cases, the latter in one.

SYMPTOMS

The symptoms of fibrotic vesical neck obstruction may be divided into those of urinary difficulty and those resulting from renal injury and infection. Urinary

Reported Cases

Cystoscopy	Treatment	Complications	Cause of Death	Autopsy and Comment
Tight contracted bladder neck; marked trabeculation; bar formation; deep bas fond; hypertrophied trigon; stone in diverticulum of bladder dome; diverticulum bladder size; marked cystitis; posterior urethra normal	Refused	Diverticulum; bladder stone	Uremia 4 months later	No autopsy; parents refused to consent to operation and took boy home against advice; time and nature of death learned from another physician
Contracted elevated bladder outlet; hypertrophic trigon; marked trabeculation; four diverticula (1, dome; 2, on floor behind trigon; 3 and 4, each lateral wall); marked cystitis; gaping ureteral orifices appear very rigid; posterior urethra normal	(1) Cystotomy drainage followed by marked improvement; uremia disappeared; bladder closed after six months; still pyuria; further treatment refused; (2) readmitted 4 months later in uremia; cystotomy and suprapubic excision of outlet contracture with punch; two transfusions (3) sounds passed to 18 F. 1 month after operation; no difficulty	Diverticula (4)	.....	Urine still cloudy 2 months following second operation; no fever, urinary difficulty or frequency; residuum 1 ounce; general condition remarkably improved
Not done because of uremia; catheter stopped at bladder neck and when passed into bladder seemed firmly grasped	Indwelling ureteral catheter drainage of bladder for 2 days with forced fluid intake	.....	Uremia	No autopsy; died on third day after admission; although uremic when first seen, the condition was made worse by the initial evacuation of the bladder; decompression begun too late; a striking demonstration of the grave danger of suddenly emptying a chronically distended bladder
Rounded bladder outlet without intrusions; median bar (?); hypertrophied trigon; left ureter opens into diverticulum of lateral wall; diverticulum seen at cystoscopy; indigo carmine test: deep blue from right side in 15 minutes, none from left in 20 minutes' observation	Punch excision of bladder neck contracture; diverticulectomy with transplantation of left ureter	Diverticulum into which left ureter opens	.....	Marked improvement following operation; residuum, 2 ounces; urine still cloudy; left ureter found to be size of thumb; 2 years later no urinary symptoms although pyuria persists
Marked trabeculation; sacculation; pouting ureteral orifices; bladder outlet very tight; median bar formation with bas fond; hypertrophic trigon; posterior urethra normal	None; refused	.....	.....	Cystoscopy through perineal section; marked improvement following instrumentation; parents removed patient from hospital against advice
None	None	.....	Sepsis (uremia ?)	Tightly contracted bladder outlet; marked trabeculation; trigon hypertrophied; left ureter ends blindly 2 cm. from bladder; left kidney dilated, infected; right ureter and kidney greatly dilated and infected; urethra normal
None	None	Diverticulum	Sepsis (uremia ?)	Dilated hypertrophic trabeculated bladder with tight vesical outlet; trigon hypertrophied; hemorrhagic cystitis; colon bacillus infection; diverticulum left lateral bladder wall; posterior urethra normal

The initial ill effect of fibrosis of the bladder outlet is interference with sphincteric (internal) opening and closing. Obstruction is thus produced. Hypertrophic bladder wall changes secondary to urinary back pressure, hypertrophy of the trigon due to the added difficulty of sphincter opening and a definite residual urine may be found quite some time before dense sclerotic atresia occurs. As the fibrosis of the vesical outlet continues, the floor of the orifice becomes elevated from its usual site with sagging of the bladder floor behind the obstruction (bas fond). On palpation through the open bladder, one finds the orifice abnormally small and tight; it can be dilated only with considerable force.

The pathologic changes in the urinary tract are identical with those produced by other types of infra-

frequency and difficulty are constantly observed and from the parent it will usually be learned that the cardinal symptoms of obstruction have been present since infancy. In many of these children, urination is an exceedingly laborious and sometimes painful ordeal. Because of the sphincteric infiltration, it is difficult to open the orifice and start the stream. Bladder closure may be equally difficult, and terminal dribbling results. The paradoxical incontinence of chronic bladder overdistention may lead to the erroneous diagnosis of enuresis. Vesical distention is suggested by persistent lower abdominal pain and is diagnosed by bimanual examination or, better, by the disappearance of the mass with catheterization. Sometimes recurring attacks of acute retention require repeated catheterization, as

in one of my cases. Severe pain over one or both kidneys may be continuous or may accompany the strenuous efforts of voiding. This observation at once suggests reflection of the increased bladder pressure up the ureter to the renal pelvis. Infection with pyuria is the rule in these cases and is usually accompanied by a low grade fever. The triad of pyuria, fever and the loin pain of distention generally leads to the diagnosis of chronic pyelitis, with the administration of the entire gamut of medical therapeutic agents (alkalis, acidification and methenamine, hexylresorcinol) commonly employed. The disease remains. Even with frequently recurring attacks of severe dysuria, the diagnosis of acute cystitis usually satisfies the physician and deters him from subjecting the child to a thorough urologic examination.

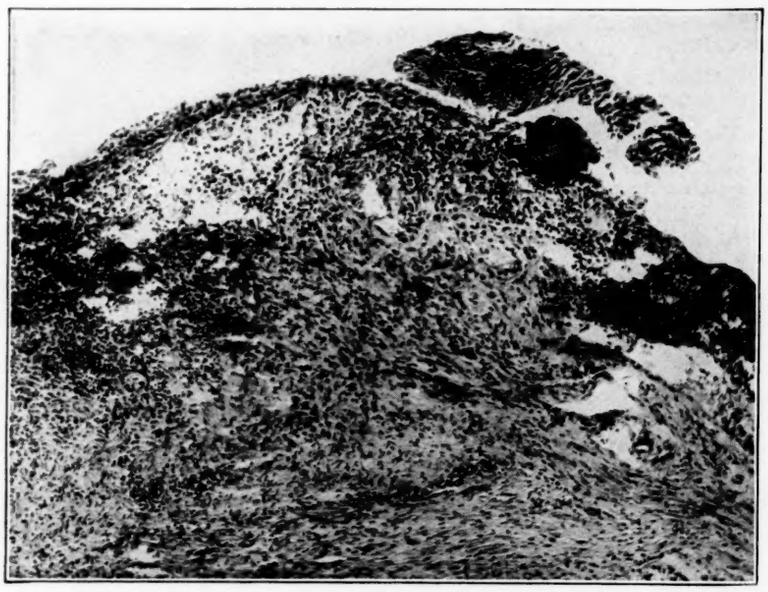

Fig. 2.—Area in which a moderate inflammatory reaction is superimposed on the sclerotic process. The infiltration is of the small round cell variety. Most of the mucosa has been removed by trauma.

As the renal injury becames marked, systemic symptoms appear and are predominantly manifestations of uremia. Gastrointestinal upsets—failure to gain or loss of weight, indigestion, malaise, lassitude, nausea or vomiting—may misdirect attention to the intestinal tract. Neurologic symptoms are first manifested by hyperirritability or headache. Later the patient becomes drowsy and, in the terminal stages, lapses into coma. A diagnosis of chronic interstitial nephritis is frequently made from the clinical picture and laboratory observations.

If an acute exacerbation of the urinary infection occurs, as it may with the development of an acute urinary obstruction or the incidence of an acute infectious process elsewhere in the body, chills, fever and other signs of urinary sepsis usually follow. Because of the lowered general resistance, intercurrent infections are often terminal; as a rule, acute renal infections or pneumonia are fatal complications.

DIAGNOSIS

The diagnosis is not difficult and is conclusively made by cystoscopy. Frequency, dysuria, pyuria or enuresis indicate urinary tract disease. Sometimes the chronically distended bladder may be palpated suprapubically and, as in one of my cases (case 3), the greatly dilated ureters and kidneys may be felt as well. The urologic instrumentation should be assigned to those skilled in this field and in nearly all cases may be undertaken without great risk to the child.

Before subjecting these patients to instrumentation, however, certain data should be obtained. This includes the estimation of the nitrogenous blood retention (urea or nonprotein nitrogen, creatinine) and the two hour phenolsulphonphthalein renal output. Plain roentgenograms of the urinary tract should be made to indicate the presence of urinary calculi (other than uric acid calculi, which usually do not show in films) or spinal abnormalities, notably spina bifida. The latter is of extreme importance since the neuromuscular vesical disturbances so commonly associated with spina bifida may closely simulate those of vesical neck fibrosis, and in some cases the two lesions can be differentiated only by cystoscopy.

In the diagnosis of vesical neck fibrosis, cystography is secondary only to cystoscopy. Cystograms made by roentgenographing the bladder filled with sterile 5 per cent sodium iodide solution to the point of slight discomfort not only will indicate changes in the bladder wall (dilatation, trabeculation, diverticulosis or abnormal contour) but may clearly outline the entire upper urinary tract. Difficulty in catheterization at the bladder neck is an important clue to the probable diagnosis.

A large bladder residuum is usually present in these cases and sudden evacuation, whether for the relief of retention, cystography or cystoscopy, is most unwise. Rapid emptying is often followed by marked renal shock and sometimes anuria, and a uremic death has been known to follow (case 3). If evidence of a large residuum is present (in children, 4 ounces or more), slow decompression by allowing the urine to drain off through an indwelling ureteral catheter will usually prevent a marked renal reaction following the evacuation. By this method, in some cases of marked distention, as long as four days will be required to empty the bladder. Because of the mechanical difficulties

Fig. 3 (case 1).—Submucous fibrosis of the vesical outlet in a boy, aged 2 years, with large bladder stone (*A*) in diverticulum of bladder dome. *B*, cystogram with filling of diverticulum about stone; unfortunately the outline of the bladder proper is not clearly defined. Operation was refused; the boy died in uremia four months later.

associated with indwelling catheter drainage in children, decompression with a suprapubic tube may be resorted to.

While cystography and the physical examination will usually suggest an infravesical obstruction, the true diagnosis of submucous fibrosis of the vesical neck is made by cystoscopy. Because the immense value of cystoscopic diagnosis and the relative impunity with which this examination can be carried out in children are not as yet generally appreciated by the medical profession, recourse to these modern urologic methods is all too frequently advised against by those medically responsible for the child. General anesthesia, when required, is of brief duration; rarely is it needed in girls over 5 and boys over 8 years of age.

Fig. 4 (case 2).—Cystogram in 3 year old boy with submucous fibrosis of the vesical outlet. Bilateral ureteral reflux and a markedly irregular bladder outline are noteworthy. Only one (left) of four diverticula seen cystoscopically (dome, floor, each lateral wall) shows distinctly. The obstruction was excised through a cystotomy exposure. Recovery with satisfactory result.

If considerable fibrosis is present, the bladder neck will firmly grasp the infant cystoscope. The cystoscopic picture may be that of median bar formation in which only the lower posterior urethral segment shows rounded contractural elevation. If the fibrosis encircles the outlet completely, a rounded, rigid, collar-like appearance will be seen. Pocketing or pouching of the bladder floor will be noted not only just behind the obstruction but often behind the trigon as well. Frequently the hypertrophied trigon appears as an elevated plateau, surrounded laterally and posteriorly by a sagging bladder floor. Other back pressure changes—diverticula, trabeculation and gaping ureteral orifices—are commonly found. In older boys, rectal palpation against the instrument in the urethra may reveal the sclerotic contractural ring at the bladder outlet; when the tip of the instrument is withdrawn from the scar, a "jump" may be felt.

DIFFERENTIAL DIAGNOSIS

Congenital fibrotic obstruction of the vesical neck must be differentiated from that due to congenital valves of the posterior urethra, urethral stricture and most especially neuromuscular vesical disease. Urethral instrumentation and cystoscopy, respectively, will determine the presence of stricture and valves; the cystoscopic diagnosis of late neuromuscular disease is often difficult. In many cases an associated spina bifida suggests the diagnosis; sometimes demonstrable cord disease is present. Neurogenic bladder atony and the late atony of severe chronic obstructive disease are often indistinguishable to inspection; the abnormally tight bladder outlet of sclerosis cystoscopically observed establishes the diagnosis of fibrosis.

PROGNOSIS

The prognosis is in direct ratio to the degree of renal injury. If the condition has progressed to such a point that the establishment of free urinary drainage will not bring about resumption of at least a moderate renal function, the outlook is most grave. In advanced disease, bladder dilatation and sclerotic hypotonia may be sufficient to prevent proper bladder emptying even though the obstruction is removed. In the latter instance, cystometry will aid greatly in prognostication.

TREATMENT

The treatment of submucous fibrosis of the vesical outlet is surgical excision, and the same preoperative and postoperative measures as are employed in prostatectomy must be even more assiduously employed in these young patients. To repeat, slow decompression of the bladder should be carried out if a large residuum is suspected and certainly in all cases in which this viscus is palpable suprapubically. I have had little success with continuous urethral catheter drainage in children; invariably the catheter is pulled out. I believe that cystotomy with suprapubic tube decompression is preferable when prolonged preoperative bladder drain-

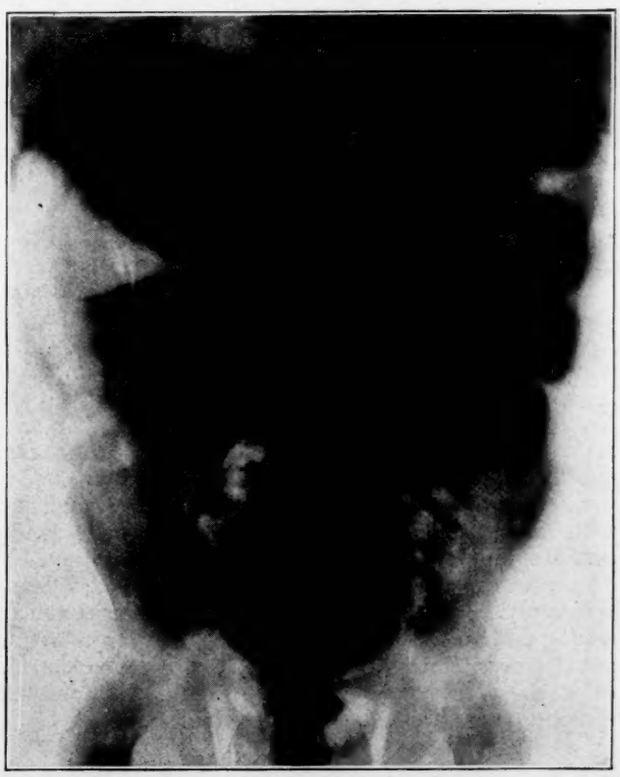

Fig. 5 (case 3).—Cystogram in a boy, aged 18 months, in whom the diagnosis of submucous fibrosis of the vesical outlet seemed most likely. He was uremic throughout hospitalization, and cystoscopy was not done. Urethral catheter stopped at bladder neck but could be made to enter with pressure. The irregular outline of the enlarged bladder together with the enormous hydronephrosis of the left kidney is notable. Both kidneys and ureters were palpable. The pathologic changes in the upper urinary tract are identical with both bladder outlet fibrosis and congenital valves of the posterior urethra; in this case, certain observations on urethral instrumentation led to the former diagnosis. Treatment consisted of continuous bladder drainage through indwelling ureteral catheter. Uremic death took place in three days.

age is anticipated. A forced fluid intake is always imperative in these cases. When renal shock has passed off following the initial bladder drainage and the functional condition of the patient permits, the obstruction may be excised.

In most instances the miniature punch instrument of Young is preferable because it efficiently removes the obstruction and does not expose the patient to the added shock of a perineal attack (used by some) or of a suprapubic cystotomy. As in a case of mine, however (case 2), a grave surgical risk because of extreme nephropathy, I believe that cystotomy drainage is preferable. Later when the general condition of the child permits, the obstruction can be removed through the suprapubic opening or by the urethral punch. Moreover, the postoperative prognosis is rendered more favorable by virtue of free suprapubic bladder drainage. Through the open bladder calculi may be removed or, as in a case of ours, diverticula may be resected. In the latter instance, removal of the fibrotic obstruction was accomplished by the Young punch. Because the left ureter opened into the excised diverticulum, ureteral transplantation was required (case 4). For the suprapubic excision of bladder neck fibrosis in children, I have found the nasal spur punch of the rhinologists a most useful instrument. It was successfully employed in case 2.

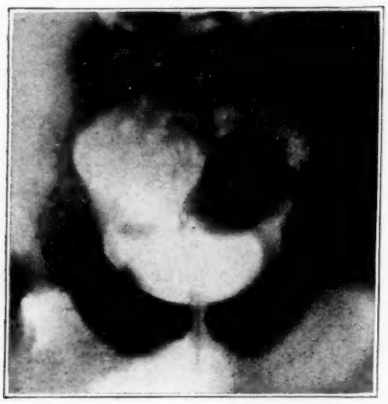

Fig. 6 (case 4).—Diverticulum into which the left ureter opened, associated with congenital bladder neck fibrosis in 14 year old boy. In the cystogram made by completely filling the bladder with sodium iodide, withdrawing the bladder medium and reinjecting air, the diverticulum remained filled with iodide; the bladder proper is outlined in the pneumogram. Treatment consisted of the Young punch excision of fibrosis with diverticulum resection and ureteral transplantation.

After operation, water in abundance together with supportive measures, preferably blood transfusion, constitutes the treatment. In a few of the cases reported in the literature, removal of the fibrosis was accomplished with eminent success. Such observations strongly indicate the importance of the early recognition and proper treatment of this condition in childhood, it being constantly borne in mind that in a fair proportion of adults presenting advanced nephropathy secondary to bladder neck fibrosis, the history discloses the existence of urinary frequency, difficulty, dysuria, pyuria and sometimes enuresis since earliest childhood.

SUMMARY

Submucous fibrosis of the bladder outlet is not an uncommon condition but its recognition in childhood has, in the past, been a rarity. Girls are singularly exempt. Pathologically the lesion is a submucous sclerosis of the vesical orifice. The internal sphincteric mechanism may be partially but is never completely involved in the scar. Sphincteric function is interfered with; urinary obstruction with difficult or incomplete bladder emptying results. The urinary tract changes are those of infravesical obstruction. The degree of renal injury is of paramount clinical interest and importance.

Symptomatically the lesion is evidenced by urinary frequency, difficulty, dysuria or dribbling as well as by various degrees of chronic vesical retention. Systemic symptoms when present are manifestations of uremia and are referable both to the gastro-intestinal tract and to the central nervous system. Infection is present in most instances and usually causes a low grade fever. The history and cystography suggest the diagnosis; cystoscopy confirms it. Treatment is surgical and consists in removal of the fibrotic obstruction. The same preoperative preparation and postoperative care required for prostatectomy must be often more carefully observed here. With strict attention to the various clinical and functional factors, a satisfactory surgical outcome may be anticipated. The recognition and treatment of congenital fibrosis of the vesical outlet in early childhood will in most instances prevent serious (and often fatal) renal disease in later years.

When physicians in general more keenly appreciate the high incidence of serious urologic disease in infancy and childhood and when they become educated to utilize modern urologic methods of diagnosis and treatment in these young patients literally crying for attention and relief, a vast amount of needless suffering and renal destruction will be prevented. It is indeed an ideal field for the exhibition of preventive medicine and surgery.

33 East Sixty-Eighth Street.

INANITION EDEMA ASSOCIATED WITH TUBERCULOUS ENTERITIS

MECHANISM OF THE PRODUCTION OF EDEMA*

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Inanition edema, though most frequently associated with the dietary deficiencies of war time, is found also in cases of malnutrition secondary to disease of the gastro-intestinal tract. Wolferth[1] reported two cases of this type which presented very low serum protein percentages, and mentioned the importance of recognizing the nutritional factor. Schittenhelm[2] has emphasized the low protein diet as a cause of starvation edema in Europe during the recent war. A low blood protein percentage, rising with subsidence of the edema, was an outstanding feature in this series of cases.

This diminution of the plasma proteins is of particular interest in view of the accumulating evidence which shows that the interchange of fluid between blood and tissue spaces depends on the balance between the colloid osmotic pressure of the plasma proteins and capillary pressure. Direct measurements on single capillaries in animals (Landis[3]) showed that filtration of fluid into the tissue spaces occurred when the capillary pressure was greater than the osmotic pressure of the plasma proteins, while absorption into the blood

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1. Wolferth, C. C.: Inanition Edema Associated with Alimentary Disturbances in Adults, M. Clin. North America **8**: 785 (Nov.) 1924.
2. Schittenhelm, A.: Oedemkrankheit, Enzyklopaedie der klinischen Medizin, number 12, Berlin, Julius Springer, 1927, pp. 738-789.
3. Landis, E. M.: Micro-Injection Studies of Capillary Permeability: II. The Relation Between Capillary Pressure and the Rate at Which Fluid Passes Through the Walls of Single Capillaries, Am. J. Physiol. **82**: 217-238 (Oct.) 1927.

stream accompanied the reverse condition. Under normal conditions, both in the frog and in mammals, these two forces are balanced, so that filtration occurs in the arterial end of the capillary network, and absorption in the venous portion (Landis [4]), by reason of the gradient of blood pressure fall through the capillaries.

If, however, the colloid osmotic pressure becomes abnormally low it permits excessive filtration, which, exceeding the power of the lymphatics to conduct fluid away from the tissues, produces an accumulation of fluid in the tissue spaces. The possibility of explaining the intercellular forms of edema on this basis has been discussed by Krogh.[5] A number of clinical studies have indicated a rather close relationship between low colloid osmotic pressure and the appearance of edema in certain forms of kidney disease and in advanced myocardial insufficiency. The edema of malnutrition has apparently not been studied in this respect, although it presents the problem free from such possible complicating factors as blood vessel disease, renal disease and tissue asphyxia.

TABLE 1.—*Range of Capillary Blood Pressure in Fingers*

	Finger	Capillary Pressure, Mm. of Mercury
Right hand	Second	21-35
	Third	18-32
	Fourth	24-26
	Fifth	21-28
Left hand	Second	37-39
	Third	25-32
	Fourth	18-37
	Fifth	22-37

In this paper we are reporting determinations of the capillary pressure and colloid osmotic pressure of the serum proteins in a case of inanition edema associated with tuberculous enteritis. The elevation of the colloid osmotic pressure of the blood by transfusion and by a high protein diet was followed by subsidence of the edema, though the underlying process progressed to a fatal termination.

REPORT OF CASE

History.—M. E., a white girl, aged 21, single, was admitted to the medical division of the University Hospital in the service of Dr. Alfred Stengel, May 10, 1928, because of swelling of the extremities and the face. Her illness had begun two years before with diarrhea which persisted for seven months, during which time she had from eight to ten thin watery stools daily. Appendectomy was performed at this time at another hospital in Philadelphia. The diagnosis was acute exudative appendicitis, but there was no histologic study of the appendix. The operation was followed by cessation of diarrhea. Shortly thereafter the patient suffered from attacks of abdominal pain, with nausea and vomiting, and was admitted to a different hospital in Philadelphia, where she remained for a month. Medical treatment and a single blood transfusion did not produce any appreciable improvement.

The patient then went to a so-called nature cure sanatorium in Pennsylvania and was subjected to a markedly restricted diet. She stated that breakfast consisted of corn flakes with raw milk. Lunch usually included only spinach, carrots and an occasional baked potato, with an avoidance of all protein-containing foods. Canned fruits or an apple comprised the dessert. The evening meal was composed of raw spinach, raw beets and lettuce with a small amount of mayonnaise. Buttermilk twice weekly seems to have been the only regular protein allowance. In the latter part of her two months' stay at the sanatorium she was permitted to have an occasional egg, with a small piece of chicken on Sundays.

After three weeks on this regimen the patient noticed swelling of the ankles, at first relieved by rest in bed, but later persisting. This edema progressed in severity and finally involved the face to such an extent that the eyes could not be opened. Simultaneously her weight increased from 85 to 100 pounds (38.6 to 43.4 Kg.), presumably as a result of retained fluid. A persistent polyuria of mild grade was the only urinary symptom. The patient remained at this institution for two months, leaving when the facial edema made its appearance.

Examination.—The previous medical history, social history and family history were entirely irrelevant. Physical examination revealed a marked facial edema, located particularly in the orbital tissues. The palpebral fissures appeared only as small slits when the eyes were voluntarily open. The blood pressure was 98 systolic and 65 diastolic with slight tachycardia. Examination of the heart and lungs was negative. In the abdominal wall there was the well healed scar of the previous appendectomy. A moderate amount of ascites was demonstrable. Extensive soft edema was present in the thighs, legs and over the sacrum.

Laboratory Tests.—Numerous examinations of the urine showed an occasional trace of albumin, no casts and no excess of leukocytes in the catheterized specimen. The phenolsulphonphthalein elimination was 57 per cent in two hours. The blood examination on admission revealed: hemoglobin, 75 per cent; red blood cells, 4,280,000, and white blood cells, 4,800. The differential count was normal. The blood urea nitrogen was 10 mg. per hundred cubic centimeters, the blood uric acid, 2.9 mg., and the blood sugar, 0.080 per cent. The blood cholesterol was 186 mg., the blood phosphorus 4.3 mg., the blood calcium 8.2 mg. and blood plasma chlorides 5.93 mg. per hundred cubic centimeters. The basal metabolic rate was minus 13 per cent.

Examination of the stools showed no ova or parasites, nor were they grossly abnormal at this time. Examinations of the urine by sedimentation and guinea-pig inoculation were negative for tubercle bacilli. Roentgen examination of the chest was negative. Roentgen examination of the gastrointestinal tract by Dr. Pancoast indicated a moderate degree of stasis in the small intestine, which was interpreted clinically as resulting from the presence of ascites.

Four days after admission the abdomen was tapped and 375 cc. of thin, translucent, milky fluid was obtained. This fluid had a specific gravity of 0.005, with 0.04 per cent protein, and contained 400 red blood cells, and 70 white blood cells per cubic millimeter, with 50 per cent of neutrophils and lymphocytes in a differential count of the leukocytes.

TABLE 2.—*Serum Protein Determinations*

Date	Serum Protein Percentage		Colloid Osmotic Pressure of Serum	
	Patient, Per Cent	Normal, Per Cent	Patient, Mm. Hg.	Normal, Mm. Hg.
May 14	3.6	9.0	12.0	27.8
May 31	3.3	8.8	12.5	26.5
June 3	Blood transfusion, 500 cc.			
June 8	4.0	...	17.5	....
October 29	4.7	...	19.5	....
October 29	Blood transfusion, 500 cc.			
October 29	5.3	...	22.0	....

Clinical Comment.—The history of diarrhea for seven months with increasing weakness and emaciation suggested a tentative diagnosis of tuberculous enteritis, but this opinion was not confirmed by any of our laboratory studies. Even the ascitic fluid had the properties of a transudate rather than those of an inflammatory exudate. Moreover, when the patient was admitted to the University Hospital the facial and peripheral edema with ascites overshadowed the remainder of the clinical picture. In view of the dietary restrictions preceding and during the development of the edema, the diagnosis of inanition edema from protein starvation seemed justifiable. That the marked dietary

4. Landis, E. M.: The Capillary Pressure in Frog Mesentery as Determined by Micro-Injection Methods, Am. J. Physiol. **75**: 548-570 (Feb.) 1926. Micro-Injection Studies of Capillary Pressure in Mammalism Mesentery, ibid. **85**: 387 (June) 1928.

5. Krogh, A.: Anatomy and Physiology of Capillaries, New Haven, Yale University Press, 1929.

restriction was at least an important added factor in the production of the edema seems reasonably certain.

Special Studies.—The tentative diagnosis of inanition edema prompted studies of (*a*) capillary pressure, (*b*) serum protein percentage, (*c*) the colloid osmotic pressure of the blood serum and (*d*) the protein percentage of the ascitic fluid. Capillary blood pressure was measured at the base of the finger-nail by the indirect tonometer method of Danzer and Hooker.[6] All pressures were determined with the patient recumbent and the finger tip at the heart level. The range of pressures observed in each finger is recorded in table 1. These pressures exceed slightly the normal limits of variation. This elevation of capillary pressure persisted without significant change throughout the clinical course. It may possibly be related to the hypotension, which has been ascribed to a diminished vasomotor tone incident to malnutrition. Such a slight increase in capillary blood pressure would be expected with a diminution of arteriolar resistance. This increase of capillary pressure was not sufficiently great, however, to explain the presence of edema.

Serum protein percentage was measured by the refractometer, and the colloid osmotic pressure by the method described by Mayrs[7] with simultaneous control observations on normal serum. Table 2 shows a series of these determinations made during the clinical course of this case. Shortly after admission, during the period when edema and ascites were present, the serum protein percentage was 3.6, compared to the normal of 9.0. The colloid osmotic pressure measured 12 millimeters of mercury, less than half the control determination, which was 27.8 mm.

Clinical Course.—Because of these observations the diagnosis of inanition edema seemed substantiated, particularly in view of the low protein percentage of the ascitic fluid, which was within the range found by others as characteristic of mechanically produced transudates (Loeb, Atcheley and Palmer[8]; Iverson and Nakazawa[9]). It seemed essential, therefore, to raise the protein content and with it also the colloid osmotic pressure of the blood in order to control the edema. After a period of high protein diet these values were practically unchanged (May 31, table 2) and there was little diminution in the amount of edema, in spite of rest in bed during this time.

Blood transfusion was resorted to at this stage in order to provide the required plasma proteins more effectively, although the blood count itself presented no indication for transfusion. Five hundred cubic centimeters of citrated blood (June 3) raised the serum protein percentage to 4.0 and the colloid osmotic pressure to 17.5 mm. This was followed by a rapid subsidence of the edema, so that on June 7 there was no evidence either of edema or of ascites. The patient was discharged free from symptoms, June 20, and referred to a convalescent home for further care, with the recommendation that the high protein and fat diet be continued.

She was readmitted to the University Hospital, October 24, having remained at the convalescent home from June 20 to September 1. She had had no edema since discharge but returned to the hospital solely because of weakness. Physical examination at this admission showed considerably more emaciation, but no edema of the face or of the extremities and no ascites. She had no gastro-intestinal symptoms. The blood count revealed a distinct secondary anemia: hemoglobin, 61 per cent and red blood cells 3,600,000. The serum proteins had risen in the interval to 4.8 per cent and the colloid osmotic pressure to 19.5 mm., a distinct advance over the preceding figures, and associated with continued absence of edema. A second blood transfusion (500 cc.) raised the protein percentage to 5.4 and the colloid osmotic pressure to 22.0. This was followed by general clinical improvement and the patient was discharged, November 3.

Early in January, 1929, she was admitted to the Howard Hospital, Philadelphia, in the service of Dr. Barton C. Hirst, complaining at the time of an abdominal mass. Exploratory laparotomy by Dr. Hirst was reported as follows: "The terminal 18 inches of the ileum was greatly infiltrated, inflamed and indurated, and presented all the gross evidence of tuberculosis. The line of demarcation between diseased and healthy intestine was marked. The appendix had been well removed at a previous operation. The glands of the mesentery of the affected intestine were involved." No intestinal surgery was performed. The patient was transferred to the Eagleville Sanatorium for Consumptives, where she died, March 6, 1929, without return of edema or ascites.

6. Danzer, C. S., and Hooker, D. R.: Determination of the Capillary Blood Pressure in Man with the Microcapillary Tonometer, Am. J. Physiol. **52**:136-167 (May) 1920.

7. Mayrs, E. B.: Functional Pathology of Nephritis, Quart. J. Med. **19**: 273-297 (April) 1926.

8. Loeb, R. F.; Atcheley, D. W., and Palmer, W. W.: On the Equilibrium Condition Between Blood Serum and Serous Cavity Fluids, J. Gen. Physiol. **4**: 591-595 (May) 1922.

9. Iversen and Nakazawa: Ueber die Biochemie des Filtrations oedem, Biochem. Ztschr. **191**: 307-319, 1927.

COMMENT

This patient, while presenting a history suggestive of tuberculous enteritis, lacked significant evidence in favor of this diagnosis. An earlier recognition of the underlying process might have been made possible by a microscopic examination of the appendix removed at the time of her first illness. Later, on admission to the University Hospital, the low protein content of the ascitic fluid was regarded as evidence against tuberculous disease. Doubtless at this time the peritoneum was not affected, and the ascites was due solely to the inanition and the low plasma protein percentage.

The character of the edema, the history of dietary deficiency, and the special symptoms substantiated the diagnosis of inanition edema, though the persistent tachycardia and the inefficacy of the dietary treatment were not to be explained on this basis. The identification of tuberculous enteritis as the underlying condition explained these two exceptional features of the case satisfactorily. It seems clear, however, that the period of dietary deficiency was the important added factor which produced the edema of inanition, and also that the blood transfusion was an effectual means of treating this disturbance of fluid balance, in the presence of the diminished intestinal absorption due to the tuberculous enteritis.

The chief factors apparently concerned in the production of intercellular edema are (1) capillary blood pressure; (2) the osmotic pressure of the plasma proteins; (3) the permeability of the capillary wall, since permeability to proteins diminishes the effective colloid osmotic pressure of the blood, and (4) lymphatic drainage. In this case the capillary blood pressure was very slightly elevated, but the colloid osmotic pressure of the blood serum was exceedingly low. Both these factors, the latter particularly, would produce increased filtration of fluid into the tissue spaces.

There is no adequate means at present of measuring the permeability of the capillary wall in man. However, it seems probable that in this instance there was no significant change in the permeability to protein, since the ascitic fluid contained only 0.04 per cent. In inflammatory conditions such as tuberculous pleurisy, the protein content of the effusion is between 4 and 6 per cent, according to Loeb, Atcheley and Palmer[8] and Iversen and Nakazawa,[9] whereas mechanically produced fluids, as those of portal obstruction, contain less than 1 per cent of protein. The ascitic fluid in this case fell in the latter class, and the fact that the ascites disappeared simultaneously with the peripheral edema indicates the correctness of the inference that the ascites was mechanical rather than inflammatory in origin.

There is also no reason to believe that lymphatic drainage was impaired because of the prompt improvement observed when the balance between the colloid osmotic pressure of the blood and the capillary pressure was restored. It seems possible, therefore, to explain

the edema by the physical factors involved, in which it resembles the edema of nephrosis and that of chronic nephritis.

Govaerts [10] concluded from his studies that all edemas were due either to low colloid osmotic pressure or to high capillary pressure, a generalization that is too inclusive, since, as Krogh points out, the rare edemas due to intracellular collections of fluid are not to be explained on this basis. Krogh restricts his discussion, therefore, to the intracellular types of edema. Moreover, increased capillary permeability is certainly a factor of importance in inflammatory edema, and possibly to a certain extent in cardiac edema, because of tissue asphyxia in the latter case.

There is ample evidence of the importance of physical factors in producing abnormal distribution of fluid in the body. Govaerts records a striking reduction in protein percentage and in the colloid osmotic pressure of the plasma in nephritis with anasarca. Likewise in hydremic nephritis, Mayrs [7] observed that edema was associated with diminution of the colloid osmotic pressure of the plasma, probably itself the result of loss of protein through injured glomeruli. He found also that subsidence of edema in acute hydremic nephritis was associated with increase in the colloid osmotic pressure. Schade and Clausen [11] report a series of cases of chronic nephritis and nephrosis with edema which presented low colloid osmotic pressures, referred to in their paper as "onkotic" pressures.

The association of a low colloid osmotic pressure with a relatively high protein percentage in nephrosis has been quantitatively explained by Govaerts,[12] who finds that the change in the albumin globulin ratio is directly due to the excretion of the smaller dimensioned and osmotically more active albumin fraction. This ratio was found by Wolferth to be approximately normal in his cases of inanition edema. The proteins in the case reported here were not fractionated, but the proportionate reduction of protein percentage and colloid osmotic pressure makes it highly probable that there was little change in the albumin globulin ratio.

Iversen and Nakazawa state that, when the hydrostatic pressure is unchanged, edema in ambulant patients appears when the colloid osmotic pressure is reduced to between 17 and 21 mm. of mercury. Mayrs observed that edema disappeared when the colloid osmotic pressure was elevated to between 15 and 17 mm. In the patient considered here, edema disappeared only after the colloid osmotic pressure had been raised to 17.5 mm. by transfusion, agreeing fairly well with the general range of these estimates.

In cardiac edema the mechanism is complicated by the possibility of elevated capillary pressure and of injury to the endothelium by tissue asphyxia. The indirect measurements of capillary blood pressure in this form of edema have been conflicting and in general quite unsatisfactory. The possibility of injury to the endothelium is suggested by the fact that lack of oxygen increases capillary permeability in the frog to such an extent that the plasma proteins can pass through the endothelium into the tissue spaces, thus lowering the effective colloid osmotic pressure of the blood (Landis [13]). In man, however, the only evidence of such an increase in permeability in cardiac edema is found in the relatively high protein content of ascitic fluid (Loeb, Atcheley and Palmer [8]) and of tissue fluid (Beckmann,[14] Haas [15]) in this condition. Iversen and Nakazawa found particularly in early cases of cardiac decompensation with edema that the colloid osmotic pressure of the plasma proteins is not sufficiently low to explain the collection of fluid and suggest the possibility of other factors. Schade and Clausen also found little or no reduction in the colloid osmotic pressure in early cases. In late cardiac disease, presenting chronic passive congestion of the kidneys and marked albuminuria, Govaerts and also Iversen and Nakazawa observed a much reduced colloid osmotic pressure associated with the edema. Farkas [16] states that cardiac edema was associated with various gradations between normal and elevated venous pressure, combined with decreased and normal colloid osmotic pressures, respectively, suggesting that a combination of factors may be present, which vary in individual importance from patient to patient.

In the edema of chronic nephritis, of nephrosis and of inanition there is rather general agreement concerning the etiologic importance of the diminished colloid osmotic pressure of the blood. Certainly in view of the evidence favoring a physical explanation of edema it seems unnecessary at this stage to consider the activity of a hypothetic central nervous control of capillary permeability and fluid balance, as has recently been done by Elwyn.[17] The modifications of water balance produced by chloride administration are temporary in character and there is a constant tendency to return to the equilibrium which is determined by the relation between capillary blood pressure and the osmotic pressure of the plasma proteins. In acute nephritis, however, the mechanism is complicated by the possibility of inflammatory injury of the capillary wall, more or less general in extent, and at present not quantitatively estimated. Cardiac edema apparently must also be considered tentatively to be due to a combination of the factors noted, the relative importance of each differing in particular cases.

SUMMARY

In a case of inanition edema due to dietary restriction combined with tuberculous enteritis, the capillary pressure was slightly elevated and the colloid osmotic pressure of the serum proteins was markedly diminished. The edema was attributed to the disturbed balance between the capillary blood pressure and the osmotic pressure of the blood proteins. Increase of protein and fat in the diet did not produce elevation of the serum protein percentage. Blood transfusions, however, were followed by a rapid subsidence of the edema as a result of the elevation of the colloid osmotic pressure of the blood with resultant restoration of the balance between this and the capillary blood pressure. The physical factors in the production of edema bear a distinct relation to the changes in the osmotic pressure of the plasma proteins in inanition and in renal and cardiac disease.

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DIAGNOSTIC BLOCKING OF SYMPATHETIC NERVES TO EXTREMITIES WITH PROCAINE

A TEST TO EVALUATE THE BENEFIT OF SYMPATHETIC GANGLIONECTOMY *

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The investigations of Royle and Hunter, Leriche, Adson, Brown and Rowntree, and others have shown that excision of the upper dorsal or the lower lumbar sympathetic ganglions will bring about vasomotor paralysis of the corresponding extremity, a cessation of perspiration, and the relief of a number of obscure trophic and painful conditions. Such an operation is extremely satisfactory in cases in which the poor circulation is due to overactivity of the vasomotor nerves rather than to arterial obliteration, and also in bringing about the relief of pain when it is referred over the involuntary nervous system. But it is often difficult to make sure of these two important premises in advance and one therefore hesitates to subject a patient in whom the diagnosis is questionable to such a radical operation. In the past, Brown's [1] intravenous protein shock has been of great service in determining whether a given patient will react favorably to sympathectomy. In performing this test we have injected 0.02 cc. of triple typhoid vaccine intravenously (50 million organisms) and noted the increase in peripheral temperature over the rise in the mouth. The technic employed in this clinic has been described by Allen and Smithwick.[2] Individuals who have impoverished circulation from vasomotor spasm respond with a marked increase in peripheral surface temperature, whereas the ones with a purely mechanical narrowing of the walls of their arteries show only a slight rise. However, the degree of increase in surface temperature is never so great as that following ganglionectomy; in certain cases, as will be pointed out later, the results are unreliable, and the test gives no definite assistance in determining the pathways of obscure pain.

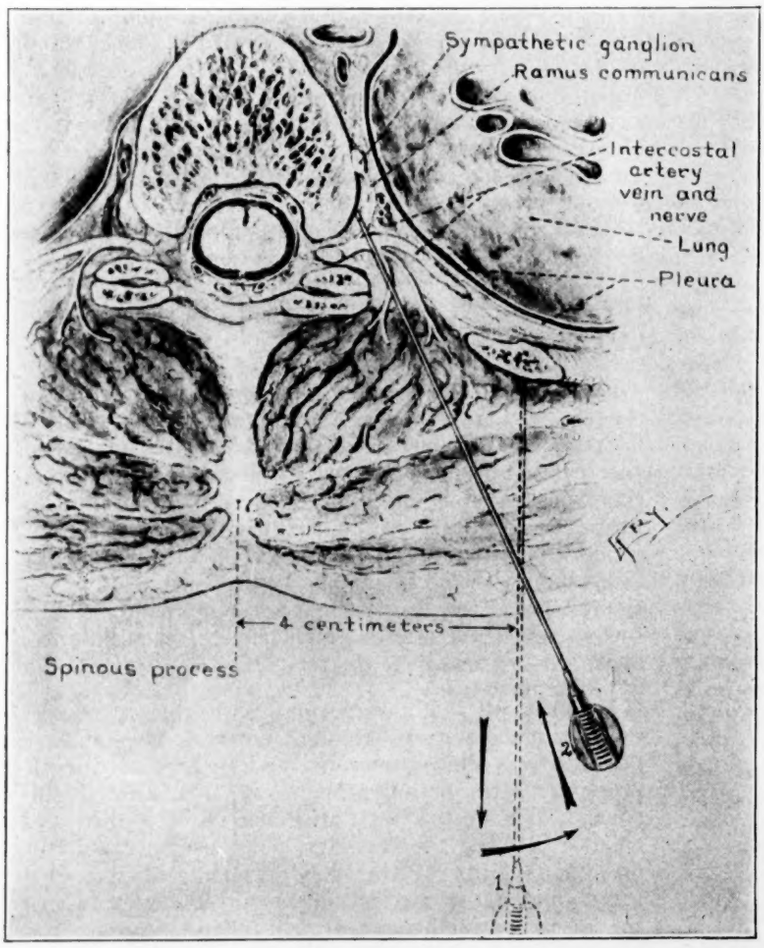

Fig. 1.—Paravertebral dorsal block. Needle 1 makes contact with the inferior border of the first and second rib and is partially withdrawn, pointed inward 25 degrees, and advanced until it comes in contact with the body of the vertebra. From Labat's Textbook of Regional Anesthesia.

During the past six months a new diagnostic test has been worked out in the Circulatory Clinic of the Massachusetts General Hospital. This consists in blocking the sympathetic fibers to the arm or leg with procaine hydrochloride. It produces for a period of from two to four hours in a given extremity all the effects of ganglionectomy; i. e., complete blocking of the vasomotor nerves, suppression of sweating, and relief of pain referred over the sympathetic nerves. In the case of the upper extremity, the Claude Bernard-Horner syndrome is also produced.

Langley [3] has shown that the vasomotor fibers to the arm are given off from the fourth to the tenth dorsal segments of the spinal cord. They then ascend the dorsal sympathetic trunk to its first and second ganglions, whence they traverse postganglionic gray rami to the cords of the brachial plexus. They can therefore be completely blocked by injecting procaine along the lateral borders of the first and second vertebral bodies, or by giving spinal anesthesia high enough to paralyze the upper dorsal cord. I have felt that the latter is not a very safe procedure and have not used it, although I have observed its effect incidentally in a number of high spinal anesthesias.

In the case of the leg, the sympathetic fibers leave the cord by white rami from the lower dorsal to the second lumbar segments. They then descend the sympathetic chain to its lumbar ganglions. Here gray rami are given off to the iliac arteries and the large nerve trunks. A vasomotor paralysis of the lower extremity can therefore be brought about by a subarachnoid block reaching to the sixth dorsal level, by injection of procaine into the retroperitoneal tissues along the sides of the lumbar vertebrae, or by blocking the sciatic nerve. All three of these routes are quite safe and the procedure is simple to carry out.

By any of these procedures the sympathetic nerves to an extremity are as effectively blocked for a few hours as they are by operative excision. This has

* From the Circulatory Clinic, Massachusetts General Hospital.

1. Brown, G. E.: Treatment of Peripheral Vascular Disturbances of the Extremities, J. A. M. A. **87**: 379 (Aug. 7) 1926.

2. Allen, A. W., and Smithwick, R. H.: Use of Foreign Protein in the Treatment of Peripheral Vascular Diseases, J. A. M. A. **91**: 1161 (Oct. 20) 1928.

3. Langley, J. N.: Origin from the Spinal Cord of the Cervical and Upper Dorsal Sympathetic Fibers, Phil. Tr. Roy. Soc., Series B, **183**: 107, 1892.

enabled us to judge quantitatively the benefit of operation and to give the patient an exact demonstration of what can be accomplished thereby.

TECHNIC OF INJECTION

The patient is made as comfortable as possible on an operating table, and the extremity to be tested along with the opposite arm or leg is left exposed to room temperature for at least half an hour. Skin temperatures are then taken with a potentiometer and thermocouple at corresponding standard points along the length of both arms or legs. Mouth and room temperatures are likewise noted.

TABLE 1.—*Variations in Temperature Induced in Case 1*

	Before Typhoid Vaccine		After Typhoid Vaccine*		Injection of First and Second Dorsal Ganglions		After Operation	
Side	Right	Left	Right	Left	Right†	Left	Right	Left
Tip of fingers	75.0	75.6	78.5	78.5	91.0	83.5	....	....
Base of fingers	80.0	78.5	....	....	95.5	88.0	....	....
Dorsum of hand	85.6	87.0	88.5	88.6	92.8	90.0	....	....
Dorsum of wrist	84.0	80.9	....	....	91.0	88.6	....	....
Middle of forearm	88.4	88.9	87.0	87.5	93.4	92.6	....	....
Middle of upper arm	90.0	91.0	....	....	94.0	95.0	....	....
Tip of toes	73.2	74.2	73.2	76.0	....	....	93.9	94.2
Dorsum of foot	74.0	75.3	82.8	81.6	....	....	86.8	88.0
Dorsum of ankle	85.0	85.6	....	....	....	....	89.2	92.0
Middle of leg	88.0	87.8	86.0	85.0	....	....	87.0	87.0
Lower thigh	87.5	87.5	....	....	....	....	....	....
Mouth	97.2		100.2		98.4		99.5	
Room	74.0		70.0		75		73.1	

* A dosage of 50 million was injected; the temperature rose to 104 F.
† Injected side.

A. *Injection of the Sympathetic Nerves Supplying the Arm.*—This is carried out as described by Labat [4] in his chapter on paravertebral injections. I used the method in which the needle is inserted 4 cm. laterally from the spinous processes of the last cervical and first dorsal vertebrae. It makes contact with the posterior angles of the first and second ribs. The inferior edge of the rib is located, and the needle is pointed 25 degrees toward the midline and pushed inward till its point touches the body of the vertebra. It should penetrate to a depth of about 3 cm. beneath the rib and lie in the region of the intervertebral foramen (fig. 1).

Injections of from 5 to 10 cc. of 1 per cent procaine hydrochloride (with a drop of 1:1,000 solution of epinephrine hydrochloride added) are made beneath both the first and the second ribs, the procaine infiltrating a large area of the loose connective tissue along the lateral surfaces of the vertebral bodies (where the chain and its ganglions lie) and also the region of the intervertebral foramina with the emerging intercostal nerves and communicant rami. I believe that 20 cc. of procaine will infiltrate such a large area that, provided the injection is made anywhere in the retropleural tissue, it will produce the desired block. At any rate, we have had no difficulties so far in producing the desired sympathetic block and no complications beyond a mild coughing spell in one of the early cases from penetration of the pleura.

In each instance there has resulted an area of skin anesthesia stretching from the points of injection into the axilla, but there has been only a partial anesthesia of the first and second spaces anteriorly and posteriorly because of the overlapping of the third and fourth cervical nerves. The Claude Bernard-Horner syndrome (constricted pupil, narrowed palpebral fissure, and enophthalmos) has been produced in each attempt, and varying degrees of increase in skin temperature (depending on the degree to which the arteries of the arm were capable of vasodilatation) have invariably followed. Vasodilatation comes on with a subjective feeling of warmth in the hand and reaches a maximum in from ten to thirty minutes. The procaine solution is so diffusible in the retropleural tissues that there has always been some diffusion to the opposite sympathetic trunk and a corresponding but lesser increase in the temperature of the other arm (tables 1 and 3).

Following injection, the skin temperatures are taken; color changes, the development of Horner's syndrome, and the suppression of perspiration in the arm are noted; the deep reflexes are tested; and the patient is asked to observe carefully his own subjective sensations. Should the signs of sympathetic block fail to appear within half an hour, there is no contraindication to rechecking the anatomic landmarks and making a second injection.

CASE 1.—L. M. T., a woman, aged 46, a native American, presenting the symptoms of Raynaud's disease, three years before admission began to notice circulatory changes in the fingers of the left hand, the tips becoming white and numb when exposed to cold. These changes advanced progressively, involving both the hands and the feet, which went through phases of blanching vasoconstrictor spasm, cyanosis and normal circulation. Potentiometer readings showed the fingers and toes to be nearly as cold as the surrounding atmosphere. After an intravenous injection of triple typhoid vaccine (50 million) the oral temperature rose to 104 F. There was practically no rise in the peripheral skin temperatures and the patient complained greatly about the discomfort caused by the test. From these results there was considerable doubt as to whether she would be benefited by sympathetic ganglionectomy, although from a clinical point of view she belonged in the classification of Raynaud's disease and not arterial obliteration.

I therefore made injections into the first and second dorsal segments on the right side paravertebrally. There was an immediate appearance of Horner's syndrome and a rise in temperature in the right hand of 15.5 degrees F. The cold, cyanotic, clammy extremity became warm, pink and dry. The patient was greatly impressed by the change and enthusiastic for operation. She said that the discomfort of the needle punctures was nothing in comparison to the typhoid reaction.

As her feet gave her more discomfort than her hands, bilateral lumbar ganglionectomy was performed by Dr. A. W. Allen. The increase in the temperature of the legs was exactly comparable to that produced by the diagnostic procaine block in the arm (table 1).

TABLE 2.—*Temperature in Case 2*

	Before Typhoid Vaccine*		After Typhoid Vaccine		Injection of First and Second Dorsal Ganglions	
Side	Right	Left	Right	Left	Right†	Left
Tip of fingers	70.0	69.5	76.4	79.0	78.3	73.8
Base of fingers	72.2	75.3	82.0	83.5	92.5	76.0
Dorsum of hand	80.0	81.1	86.5	85.6	92.9	80.2
Dorsum of wrist	81.0	81.2	85.2	85.6	90.7	83.4
Middle of forearm	87.1	87.7	87.6	89.2	92.0	88.0
Middle of upper arm	88.6	87.3	87.0	87.5	94.8	90.4
Mouth	97.9		98.4		98.2	
Room	73.0		72.0		73.0	

* A dosage of 50 million was given; the temperature rose to 101.3 F.
† Injected side.

CASE 2.—C. M. P., a woman, aged 37, Italian, presented chronic vasomotor spasm of the four extremities, with a painful right hand. She had had symptomless cold hands and feet as long as she could remember. In addition she had suffered from a painful scar between the thumb and the second finger of her right hand, with slight edema of the

4. Labat, G.: Textbook of Regional Anesthesia, Philadelphia, W. B. Saunders Company, 1928.

hand and wrist for two years. This scar in the interdigital web was 2 cm. in length and did not contain a palpable neuroma. Pressure on this region, use of the hand or strong emotion caused pain to radiate up the arm into the upper right side of the chest. To ascertain whether the pain as well as the poor circulation was of sympathetic origin, the first and second dorsal segments were injected paravertebrally. In five minutes the hand began to lose its cyanotic appearance and to warm up subjectively and objectively. In fifteen minutes

TABLE 3.—*Temperature in Case 3*

	Before Injection		After Injection	
Side	Right	Left	Right*	Left
Tip of fingers	71.5	70.0	94.5	82.7
Base of fingers	71.2	70.0	....	....
Dorsum of hand	72.4	77.2	95.5	86.5
Dorsum of wrist	73.2	78.5	....	....
Middle of forearm	76.6	88.4	92.0	89.2
Middle of upper arm	86.5	96.0	93.6	89.6
Mouth	98.2		99.0	
Room	70.0			

* Injected side.

it was hot and dry, while the left remained cold, cyanotic and moist. There was a marked pupillary constriction and drooping of the right upper lid. All the pain in the right arm and right side of the chest had disappeared and remained so for twenty-four hours. The temperature of the hand was elevated 20 degrees.

Intravenous injection of foreign protein warmed the hand 10 degrees but did not relieve the pain.

The diagnostic nerve injection in this case gave a most favorable prognosis for sympathetic ganglionectomy, but the patient was very apprehensive and is still uncertain as to whether she will submit to operation.

CASE 3.—M. E. O'M., a girl, aged 16, Irish, had spastic paralysis of the right arm and leg which came on after diphtheria at the age of 5. The affected arm was cold, cyanotic and much crippled by the spasticity. To see whether sympathetic ganglionectomy was capable of bringing about an immediate reduction of the excessive muscular tone, the region of the first and second dorsal ganglions was infiltrated with 1 per cent procaine. This produced the typical changes in the eye, suppression of perspiration, and an increase of 23 degrees in the temperature of the hand. The arm reflexes, however, remained as hyperactive as before.

The test shows that the temperature of the arm can be restored to normal by the removal of the stellate and second dorsal ganglions but that there would be no immediate reduc-

TABLE 4.—*Temperature in Case 4*

	Before Injection		After Injection	
Side	Right	Left	Right	Left*
Thumb	76.1	77.8	79.5	80.4
Dorsum of hand	88.0	91.0	83.2	85.2
Middle of forearm	92.0	91.0	88.0	90.0
Upper arm	....	....	86.0	93.6
Shoulder	....	....	89.6	93.2
Cheek	....	....	95.0	98.0
Mouth	98.2		98.2	
Room	73.2		72.8	

* Injected side.

tion of the spasticity. It fails to prove that there would not be a slow diminution in the excessive muscular tonus, which we have seen in several patients following the Royle operation.

CASE 4.—A. H., an American woman, aged 36, with scleroderma and progressive muscular atrophy, gave a history of progressive muscular weakness and atrophy during the past fifteen years. This had advanced to such a point that she was incapable of raising her arms and had been unable to walk for the past two years.

Three years before, she had noticed numbness and stiffness of the fingers. There had been a great loss of subcutaneous tissue in the fingers, arms, neck, face and thorax on both sides. This entire region was cooler than normal; the skin of the lower arms showed a waxy pallor alternating with areas of cyanosis, and the arterial pulsations were markedly reduced. The blood pressure was 90 systolic and 70 diastolic.

In this case blocking of the upper dorsal trunk and ganglions was undoubtedly complete, as it produced a fully developed Claude Bernard-Horner syndrome. Peripheral temperatures, however, were not definitely elevated. The arteries in the hand were evidently so constricted by the sclerotic subcutaneous tissue that they were incapable of dilatation.

From Leriche's[5] statistics on the effect of sympathetic ramisection on scleroderma, we felt that excision of the ganglions might bring about a slow improvement in the nutrition of the subcutaneous tissues with a secondary vasodilatation. Operation was advised on this basis, but the patient refused.

B. *Blocking the Sympathetic Fibers to the Legs.*—1. Spinal Subarachnoid Block:

Of the three methods already mentioned, this is by far the simplest. The spinal anesthesia should reach to the sixth dorsal segment; therefore skin anesthesia must rise to the level of the xiphoid cartilage. I have used 100 mg. of procaine crystals dissolved in from 4 to 5 cc. of spinal fluid. This solution, injected slowly into the fourth lumbar space with the patient lying on his side, has given very constant anesthesia to the

TABLE 5.—*Temperature Changes Induced in Case 5*

	Before Typhoid Vaccine*		After Typhoid Vaccine		Before Spinal Anesthesia		Two Minutes Later		Five Minutes Later		After Operation	
Side	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.
Level of anesthesia	.....		.....		.....		Feet		Xiphoid cartilage			
First toe	68.0	66.0	80.6	89.6	87.5	87.5	....	93.2	98.5	99.0	94.0	93.2
Dorsum of foot	72.5	76.7	89.2	90.6	89.6	89.6	....	....	....	....	85.6	87.0
Middle of leg	79.0	82.5	92.0	93.0	94.5	94.0	....	....	96.4	96.4	85.6	85.8
Lower thigh	....	....	....	....	98.0	97.2	....	....	....	....	90.4	90.5
Mouth	98.8		100.6				98.0				99.6	
Room	62.8		72.0				88.0				72.2	

* A dosage of 50 million was injected; the temperature rose to 101.8 F.

desired level. With a preliminary injection of 50 mg. of ephedrine there have been no troublesome reactions. Paralysis of the vasomotor nerves develops as the skin anesthesia reaches the xiphoid cartilage. It lasts as long as the anesthesia; i. e., from one to one and a half hours.

CASE 5.—M. McD., a girl, aged 20, Irish, with vasomotor spasm of the extremities associated with painful swelling of the leg, had had symptomless vasomotor spasm of her hands and feet since childhood. Six months before admission she had fallen down stairs and bumped her left knee. Following this accident the leg became swollen and painful; it ached so when she walked that she was forced to give up her work. The arterial pulsations in both legs were hard to feel; the dorsalis pedis on the left was absent. The extremities were cyanotic and cold—so cold that the skin of the fingers and toes was usually a little cooler than the room.

For three months she had received intravenous typhoid injections with transitory warming and symptomatic improvement of the leg. When she kept the foot elevated the swelling disappeared, but it would recur and the leg would ache as soon as she tried to use it to any extent.

She was prepared for lumbar ganglionectomy and the skin temperatures of the left leg were taken on the operating table.

5. Leriche, R., and Fontaine, R.: Résultats un peu éloignés des interventions sur le sympathique dans la sclérodermie, Rev. de chir. **65**: 285, 1927.

Spinal anesthesia was then given. In five minutes anesthesia had risen to the xiphoid cartilage, while the surface temperature of the feet had reached that of the blood. Pulsation had returned in the left dorsalis pedis artery. With this clear-cut evidence of the improvement in circulation to be obtained from sympathetic block, we went ahead and completed the bilateral operation under the same spinal anesthesia. The patient made an uneventful recovery and at present, two months after operation, has warm, painless legs.

TABLE 6.—*Temperature in Case 6*

Level of Anesthesia	Before Typhoid Vaccine*		After Typhoid Vaccine		Before Spinal Anesthesia		Five Minutes Later		Post-operative	
Side	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.
First toe	70.5	74.0	87.9	90.2	78.0	82.0	94.5	95.0	94.5	95.0
Ball of foot (near ulcer)	76.6	81.9	....	....	82.5	82.0	92.0	92.1	92.5	92.0
Middle of leg	89.1	85.6	90.0	88.4	93.0	89.2	90.2	89.8	92.8	92.2
Lower thigh	92.9	90.7	90.0	89.0	94.0	91.5	93.6	91.5	92.2	92.8
Mouth	97.2		99.2			98.0			98.4	
Room	73.8		74.6			78.5			77.2	

* A dosage of 50 million was injected; the temperature rose to 104 F.

A more accurate estimate of what sympathectomy could accomplish for this patient could have been determined by the direct injection of the left lumbar sympathetic trunk, to be described subsequently. The effect on the obscure, diffuse pain in the leg, as well as the circulatory improvement, could then have been foretold.

CASE 6.—R. M., an American lad, aged 16, had developed vasomotor spasm following poliomyelitis at the age of 5, leaving him with little permanent muscular paralysis but a bad clawfoot deformity on the left and continuous vasomotor spasm of both legs. A year before, manipulation had been done with a Thomas wrench and the foot had been put up in plaster. When this was removed a large ulcer was found on the ball of his foot. This stubbornly refused to heal and was finally covered with a Wolff graft. The graft took well but broke down promptly when he started to walk. He was then referred to the Circulatory Clinic with the request that we study the circulation in his feet and improve it if possible.

In this case intravenous injection of typhoid vaccine gave a rise of 17 degrees in the temperature of the toes with an increase in the mouth of only 2 degrees. He was then prepared for operation and the temperature readings were repeated following the spinal anesthesia. This test showed a maximum rise in the surface temperature of both feet to 95 F. Bilateral lumbar ganglionectomy was carried out on completion of the test and has resulted in a permanent increase in temperature corresponding exactly to the rise obtained by the spinal sympathetic block.

CASE 7.—W. W., an American, aged 43, was admitted with thrombo-angiitis obliterans. Two years before admission the left leg had been amputated at the knee for a painful ulceration of the first toe, and the diagnosis of Buerger's disease had been established by microscopic examination. He reentered the hospital because of a similar ulceration of the remaining big toe. The ulcer was so painful that the patient was unable to rest or to tolerate adequate local treatment. The pain was completely relieved by alcohol injection of the sensory nerves according to the technic described by Smithwick and White.[6] The ulcer, however, refused to heal. Rather than amputate his remaining leg at once, we gave him a test injection of spinal anesthesia. There was no rise in the surface temperature. This agreed with the result of previous intravenous injections of typhoid vaccine and made it quite certain that there was no hope of increasing the circulation by lumbar sympathectomy.

After a Gritti-Stokes amputation, dissection of the leg showed such extensive arterial obliteration that vasodilatation was obviously impossible.

6. Smithwick, R. H., and White, J. C.: Elimination of Pain in Obliterative Vascular Disease of the Lower Extremity, to be published.

It should be emphasized at this point that many cases of thrombo-angiitis obliterans present a considerable element of vasomotor spasm in addition to the arterial obliteration. These cases can be greatly improved by lumbar ganglionectomy, while the purely obliterative ones like case 7 do not show any beneficial effects. Before such a radical operation is undertaken it is extremely important for the surgeon and the patient to know exactly how much the circulation can be improved. This can be done simply and with quantitative precision by spinal sympathetic block.

Case 8 illustrates the type in which excessive vasomotor spasm is superimposed on arterial obliterative disease and the increase in circulation brought about by blocking the vasomotor nerves.

CASE 8.—E. F. A., an American, aged 38, had arterial obliteration, probably associated with thrombo-angiitis obliterans, although this was not proved by pathologic examination.

The patient first came under observation six months before with the complaint of burning sensations in his toes for five years, and in the fingers for one year. This condition troubled him a great deal in cold weather and recently in warm weather as well. At this time all the vessels in his feet were pulsating and the condition was diagnosed as Raynaud's disease. However, it became rapidly worse and the pulsation in the dorsalis pedis and posterior tibial arteries disappeared from both feet. Four months before the present admission the left great toe became gangrenous and was amputated. He reentered the hospital because the amputation wound had failed to heal.

Typhoid vaccine, 50 million organisms, injected intravenously on two occasions, warmed the fingers 10 degrees, but the toes showed an increase of only 5 degrees in surface temperature. With a rise in the skin temperature of only 1 degree above the oral temperature, there is little hope of benefiting a patient by sympathetic ganglionectomy. After a test dose of spinal anesthesia, however, the temperature of the toes rose from 10 to 12 degrees in forty minutes. This increase took place much more slowly than in cases of pure vasomotor spasm and stopped at 85 F. Nevertheless, it demonstrated that the circulation could be increased enough to give the ulcer a fair chance to heal.

On this basis a unilateral excision of the left lumbar sympathetic trunk with its second, third and fourth lumbar ganglions was carried out by Dr. W. J. Mixter. The increase in the temperature of the left foot after operation checked closely with that following the diagnostic spinal block. The sluggish granulations at the base of the amputated toe became clean and pink. Small full thickness grafts (Davis) have

TABLE 7.—*Temperature in Case 8*

	Before Spinal Anesthesia		Five Minutes Later		Ten Minutes Later		Forty Minutes Later		Nine Days Post-operative	
Side	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.*
Tips of toes	72.8	73.6	75.0	76.0	76.0	77.4	85.0	83.5	72.2	81.0
Base of first toe	80.8	80.0	83.0	84.0	82.3	88.8	90.7	87.5	77.0	85.2
Foot	81.6	86.0	....	....	....	....	89.6	93.6	81.2	92.6
Leg	88.4	92.4	89.0	88.0	91.0	91.5	90.0	94.0	84.6	89.8
Thigh	92.0	93.6	....	....	....	....	94.3	93.6	89.7	93.2
Mouth				98.8					97.6	
Room				75.0					77.0	

* Side operated on.

failed to take, but the skin is growing in actively from the edges of the ulcer.

The patient was discharged and was seen two months later in the outpatient department. The ulcerated amputation stump was then practically healed. The foot was of normal temperature and color, in marked contrast to the cold, cyanotic, opposite extremity.

2. Direct Injection of Lumbar Sympathetic Ganglions: This can be accomplished by the technic of Kappis and Labat[4] for posterior splanchnic anesthesia.

The injection is made with a 12 cm. needle inserted beneath the twelfth rib 7 cm. from the midline of the back. The needle is pushed toward the spine at an angle of 45 degrees. In this plane it passes through the deep muscles of the lumbar region and impinges against the body of the first or second lumbar vertebra (fig. 2). The needle is then adjusted so that it just slides by the vertebral body and is pushed in 1 cm. farther. In this position the tip of the needle lies at the anterior edge of the psoas muscle and just behind the aorta or the vena cava. It is in the retroperitoneal cleavage plane, so that 30 cc. of 1 per cent procaine-epinephrine solution will block the entire sympathetic trunk on the injected side from the first to the fourth ganglions.[7]

To any one faimliar with the technic this is no more dangerous and little more difficult than the spinal route. As it does not numb the legs and the effect lasts considerably longer, it gives the patient a much better opportunity to judge all the changes that can be made permanent by operation.

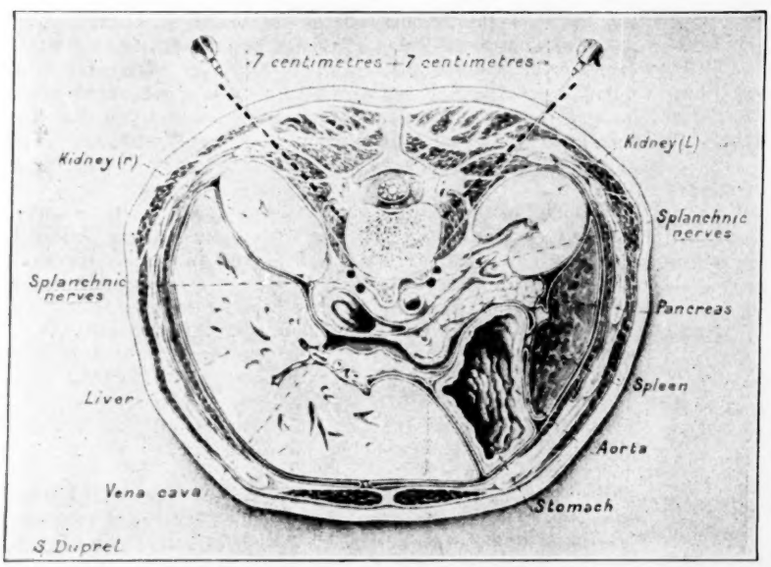

Fig. 2.—Cross-section through the first lumbar vertebra, showing the method of injecting the lumbar sympathetic trunks. From Labat's Textbook of Regional Anesthesia.

Of the three methods for blocking the sympathetic nerves to the leg, the posterior lumbar route should always be utilized in cases of obscure, diffuse pain which is suspected of being referred over the sympathetic nervous system. Spinal anesthesia and sciatic nerve block are equally suitable for testing the effect on excessive vasomotor activity, but they block the pain tracts to the leg. Posterior splanchnic injection alone gives a selective block of the sympathetic fibers and at the same time leaves the main sensory nerves of the leg intact.

CASE 9.—M. B., a woman, aged 22, Russian, was admitted with vasomotor spasm of all four extremities. During the Russian revolution she had been exposed for long periods to severe cold, although she could not remember actually freezing her hands or feet. However, they had been blue and cold ever since, with burning pain in her feet which forced her to take off her shoes and elevate her legs after she had been standing for any length of time. During the past winter she had been treated with monthly intravenous injections of typhoid vaccine with only a slight transitory warming of the extremities and but little relief of the pain in the feet. In spite of this treatment and Buerger's exercises, the condition progressed so that she had to give up work on account of the pain.

In order to test out the effect of sympathectomy on the pain as well as on the circulation, the left lumbar sympathetic trunk was infiltrated with 30 cc. of 1 per cent procaine-epinephrine solution in the manner already described. There resulted not only an increase in surface temperature of 15 degrees but a complete relief of pain in the foot during the remainder of the day. The dorsalis pedis pulse, which had been absent before injection, became clearly palpable. The posterior splanchnic injection of Kappis was much more suitable in this case than spinal sympathetic block, as it demonstrated to us as well as to the patient that her pain could be relieved by lumbar ganglionectomy.

The patient readily accepted operation. It was successfully performed recently and she is now completely relieved.

3. Injection of Sciatic Nerve: There has been considerable discussion in recent years as to whether the majority of the vasomotor fibers of the leg run down the sciatic nerve and are given off segmentally to the blood vessels or whether they descend in the sympathetic network which lies in the outer coat of the arteries. If the first theory is correct, procaine injection of the sciatic trunk, where it leaves the pelvis through the greater sciatic foramen, should produce a nearly complete vasodilatation of the arteries in the lower leg and foot. This seems to be the case, as in two instances in which I have injected the nerve for pain I have found an increase in the peripheral surface temperature comparable to that produced by the two methods already described and by ganglionectomy [8] (table 9).

The technic for sciatic nerve injection described by Labat [4] is quite easy and safe to carry out, even without previous experience.

While fully aware that my experience with sciatic injection is very limited, I feel that if further experience bears out this observation it will be the safest way to block the sympathetic fibers to the lower leg. Sciatic block is easy to induce and causes the minimum discomfort to the patient. On the other hand, when it is desirable to operate immediately following a favorable test, spinal anesthesia is a simpler and more logical procedure.

COMMENT

The accompanying tables of skin temperature changes show that the sympathetic nerves to an arm or leg can be temporarily blocked with procaine just as effectively as they can be permanently interrupted by operation. The temperature changes are of exactly the same magnitude. If there is no rise in the peripheral temperature, one must be certain that the procaine has infiltrated the sympathetic fibers before concluding that the arterial walls are diseased to such a point that they cannot be dilated.

This can be tested as follows:

1. Following paravertebral dorsal block there should be a definite Claude Bernard-Horner syndrome in the

7. Labat recommends a further injection against the body of the second lumbar vertebra in order to infiltrate the entire splanchnic plexus, but I do not believe that this is always necessary in blocking the sympathetic trunk alone.

8. Since this paper was written, Lewis (Experiments Relating to the Peripheral Mechanism Involved in Spasmodic Arrest of the Circulation in the Fingers: A Variety of Raynaud's Disease, Heart 15: 8 [Aug. 3] 1929) has reported cases of Raynaud's disease in which he injected procaine into the ulnar nerve at the elbow to test out the physiologic effect of blocking the sympathetic fibers to the little finger. In a footnote on page 79, he says, "We suggest as a preliminary, when excision of the sympathetic nerves is contemplated, that local anesthesia should be used first to determine the probable effects of denervation."

corresponding eye. Perspiration in the arm should be totally suppressed.

2. After spinal anesthesia the numbness of the skin must rise at least as high as the xiphoid cartilage.

3. When the sciatic nerve has been blocked there must be complete sensory loss in the lower leg and foot, except for the area supplied by the saphenous nerve along the course of the saphenous vein and the medial aspect of the foot.

4. With lumbar sympathetic block one must watch for the suppression of perspiration as an indication of a successful infiltration. This is a fairly satisfactory check if the two feet are sweating equally when the injection is begun. When the feet are dry, I do not know of any other way to make sure that the sympathetic impulses have been interrupted and consider it a defect in the method. However, the bodies of the first and second lumbar vertebrae form such accurate landmarks, so much procaine is injected, and diffusion is so widespread that there is but small chance of failure.

To date in a series of twenty-four injections of all types there have been no difficulties in securing the desired sympathetic block, nor have there been any complications or ill effects from it. The patients with the paravertebral and sciatic injections have complained of slight local lameness and stiffness on the following day, but this has cleared up rapidly with the use of the part. Patient 1 told me that she would much prefer a second injection of the first and second dorsal segments to another intravenous dose of typhoid vaccine.

TABLE 8.—*Temperature in Case 9*

	Before Typhoid Vaccine*		After Typhoid Vaccine		Before Injection of First Lumbar		After Injection		Post-operative	
Side	R.	L.	R.	L.	R.	L.	R.	L.†	R.	L.
Tip of toes	67.5	66.0	75.5	72.6	78.0	78.5	78.0	93.6	94.0	95.0
Base of toes	72.0	70.5	78.0	80.4	85.2	82.5	79.0	96.0	92.4	92.4
Dorsum of foot	81.6	79.0	86.0	86.0	87.0	84.4	86.0	94.0	92.4	89.6
Middle of leg	85.2	85.2	89.0	88.7	90.0	89.0	88.5	90.2	84.4	84.4
Lower thigh	86.0	85.2	93.6	94.0	90.5	90.0	90.5	93.8	92.0	88.8
Mouth		99.0		100.8		99.4		99.6		100.0
Room		72.5		68.0		76.8		76.4		70.0

* A dosage of 60 million was injected; the temperature rose to 102 F.
† Injected side.

TABLE 9.—*Temperature After Injection of Nerve*

	Before Injection		After Injection	
Side	Right	Left	Right	Left*
Tip of first toe	84.4	86.0	78.0	95.5
Dorsum of foot	91.0	91.0	88.5	94.0
Middle of leg	92.1	91.7	91.5	91.8
Lower thigh	92.8	92.8	91.6	93.2
Mouth		98.6		
Room		81.0		

* Injected side.

The important point about procaine block of the sympathetic nerves is that it imitates exactly the effect of operation. Intravenous injection of foreign protein may give a very definite rise in peripheral surface temperature, but it does not always work where it should (cases 1 and 8). Furthermore, it never gives the maximum increase in circulation which is produced by procaine block and sympathectomy.

As shown by Leriche,[9] many types of obscure pain may be referred over the sympathetic rather than over the usual sensory nerves. In certain cases of painful amputation stumps and causalgias, excision of neuromas, neurectomies and finally dorsal root section have failed to give relief. Leriche has succeeded in producing cure in a number of these by operation on the sympathetic nerves. In instances such as these the surgeon can now test out the effect of sympathectomy and plan his operative procedures with the benefit of this knowledge beforehand.

Cases 2 and 9 are instances in which obscure pain was shown to be referred over the sympathetic nervous system.

This test unfortunately does not help in judging the effects of the Royle-Hunter operation for spastic paralysis or of sympathectomy for scleroderma. Here the immediate effect of operation is probably the same as after diagnostic procaine block; but the benefit, if any, from the operation comes on slowly over a period of weeks or months.

Finally, it should be pointed out that in the case of vasospastic conditions of the legs, diagnostic procaine block can be combined with operation under the same spinal anesthesia. As shown in cases 5 and 6, by delaying operation from five to ten minutes the quantitative increase in circulation is established and operation can either be carried out under the same spinal anesthesia or given up if the increase in temperature is unsatisfactory. In one instance of arterial obliterative disease with a superimposed element of vasomotor hypertonus (case 8), the increase in peripheral temperature came on so slowly that the operation could not have been performed under the same spinal anesthesia.

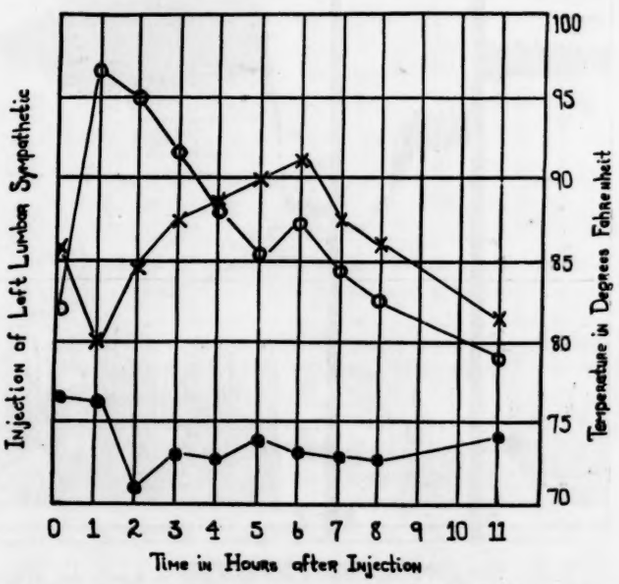

Fig. 3.—Peripheral surface temperatures following procaine block of the left lumbar sympathetic trunk: The circles indicate the temperature of the left foot at the base of the toes; the crosses, the temperature of the right foot at the base of the toes. The lower curve with the black circles shows the room temperature. Attention is called to the delayed rise in temperature as the procaine diffused across the midline and blocked the sympathetic trunk on the right side.

CONCLUSIONS

1. Blocking the sympathetic nerves with procaine is a useful diagnostic procedure to determine (*a*) the quantitative increase in surface temperature that can be produced by operation on the sympathetic ganglions and (*b*) the effect of sympathetic ganglionectomy on obscure pain which is suspected of being referred over the sympathetic nervous system.

9. Leriche, R.: La chirurgie de la douleur et ses résultats, Presse méd. **35**: 497 (April 20), 561 (May 4) 1927.

2. Diagnostic nerve blocking causes little more discomfort to the patient than foreign protein shock and is a quantitative rather than a qualitative test.

3. This procedure is reasonably safe and simple.

EPHEDRINE SULPHATE IN TREATMENT OF ACUTE SHOCK FROM TRAUMA OR HEMORRHAGE

CLINICAL USE *

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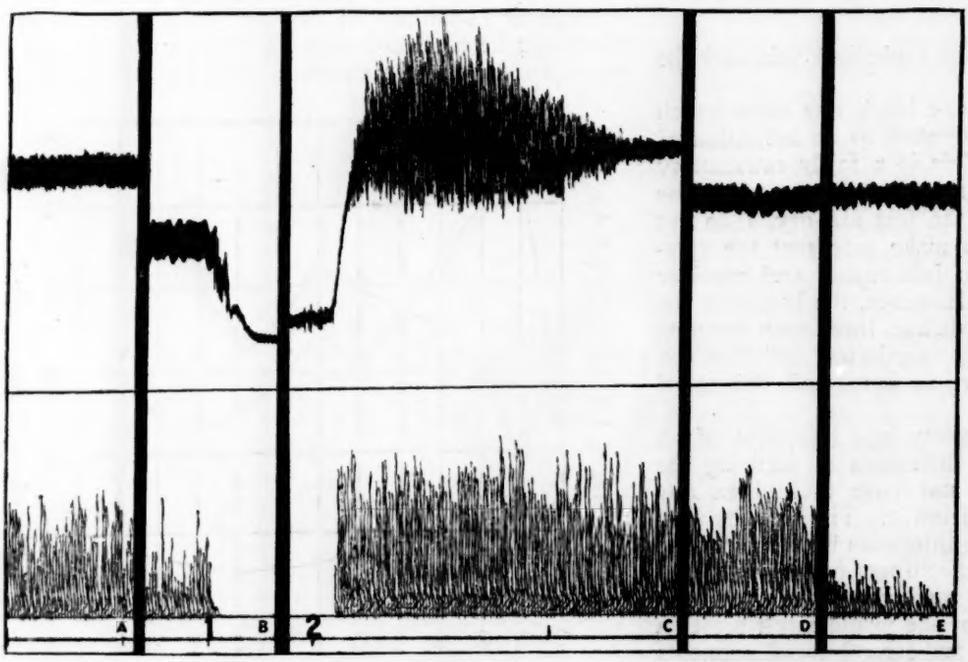
CHICAGO

It has been shown by various investigators that among other pharmacologic actions ephedrine produces a prolonged hemodynamic action as well as a pronounced stimulation of the central nervous system.



Typical record of blood pressure and knee jerk in a male dog weighing 18 Kg. which had been anesthetized with soluble barbital three hours previously. The upper record is of the carotid blood pressure; the straight line immediately below represents 0 mm. of mercury blood pressure, and the next lower record represents knee jerks taken at intervals of seven and one-half seconds. *A*, a five minute control period during which the systolic blood pressure was 146 mm. of mercury. *B*, at 1, exactly thirty minutes after *A*, during which time 450 cc. of blood was withdrawn from the femoral artery. The lowest systolic blood pressure was 34 mm. of mercury and the knee jerks had disappeared. *C*, twelve minutes later; *C*, 2, 20 mg. of ephedrine sulphate given intravenously into the external jugular vein. The systolic blood pressure rose to a maximum of 226 mm. and subsided to 150 mm.; knee jerks were markedly increased. *D*, one and one-half hours following injection of ephedrine sulphate, illustrating the sustained rise in blood pressure (systolic, 120 mg. of mercury) and the prolonged central nervous system stimulation. *E*, two and one-half hours after injection of ephedrine; the blood pressure level was maintained, but the knee jerks were depressed, probably from the anemia. Five hours later the blood pressure level was still at 120 mm. of mercury and the experiment was discontinued.

Miura [1] in 1887 showed that large doses of ephedrine would produce convulsions. In 1924, Chen [2] noted that small doses when used clinically caused slight throbbing in the head. Later [3] he reported that 200 mg. given by mouth produced perspiration, chill, palpitation, weakness, dizziness, nervousness, tremor, nausea and epigastric discomfort. He states that "the most probable explanation of these effects is stimulation of the central nervous system." Other authors, Miller,[4] Rowntree and Brown,[5] and Piness and Miller,[6] noted similar manifestations. Using the knee jerk as a criterion of stimulation of the central nervous system, Luckhardt and I [7] demonstrated on dogs that the increased knee jerk obtained following injection of ephedrine sulphate was not wholly dependent on the improved circulation but occurred as a result of stimulation of the spinal cord.

The hemodynamic action of ephedrine was reported by Chen,[2] by Chen and Schmidt,[3] and later in various types of experimental shock by Chen.[8] The results were encouraging and he suggested its use in traumatic shock and in shock from hemorrhage.

Miller [9] cites one case of postoperative peritonitis in which a slight temporary improvement was obtained from 200 mg. of ephedrine intravenously, but the patient died a short time later. Rudolf and Graham [10] cite a series of twenty cases in which from 50 to 100 mg. was used intravenously as a prophylactic to the shock sometimes observed in spinal anesthesia. In this series there was an average rise in blood pressure of 68 mm. of mercury.

After using ephedrine (100 mg. orally three times daily), Althausen and Schumacher [11] draw the conclusion that ephedrine in surgical shock is of doubtful value.

In view of the encouraging results of Chen [8] in experimental shock and the conflicting clinical results as to the value of ephedrine intravenously in the treatment of traumatic shock and shock from hemorrhage, I wished to give the drug a further trial in hospital cases with smaller doses, knowing [12] that after large doses there ensues a secondary paralysis of the myoneural junction and the smooth musculature of the blood vessel itself.

PROCEDURE

Two series of experiments were performed:

1. A series in animals in which shock was induced by hemorrhage. The animals were anesthetized with soluble barbital (250 mg. per kilogram intraperitoneally) and arranged for the taking of simultaneous records of the blood pressure and knee jerk according

* From St. Luke's Hospital, and the Hull Physiological Laboratories of the University of Chicago.

* This work was carried on under the supervision of Dr. Luckhardt and Dr. Greer of the St. Luke's Hospital staff.

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5. Rowntree and Brown: Endocrinology **10:** 301, 1927.
6. Piness, George; and Miller, Hyman: Ephedrine in Asthma and Hay-Fever, J. A. M. A. **89:** 515 (Aug. 13) 1927.
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8. Chen, K. K.: J. Pharmacol. & Exper. Therap. **26:** 83 (Sept.) 1925.
9. Miller, T. G.: Am. J. M. Sc. **170:** 157 (Aug.) 1925.
10. Rudolf, R. D., and Graham, J. D.: Am. J. M. Sc. **173:** 399 (March) 1927.
11. Althausen, T. L., and Schumacher, I. C.: Clinical Results with Ephedrine Therapy, Arch. Int. Med. **40:** 851 (Dec.) 1927.
12. Koppanyi and Luckhardt: Personal communication to the author.

to the method that I have described.[13] After a suitable control period, the animal was bled through the femoral artery until sufficient shock was induced. Following this, 15 mg. of ephedrine sulphate was injected intravenously. The experiments lasted about eight hours following the injection.

2. A second series of experiments in selected patients at St. Luke's Hospital. The procedure will be cited in the individual reports. There are ten cases, four of which will be reported.

RESULTS

The accompanying tracing illustrates the results obtained in a dog weighing 18 Kg. from which 450 cc. of blood was withdrawn during the course of half an hour.

Following the intravenous injection of 15 mg. of ephedrine sulphate there was a precipitous rise in the blood pressure to above normal. This subsided to slightly below the normal level and continued thus for six hours, after which the experiment was discontinued.

It will also be noted that the knee jerks rose above the normal level and gradually decreased in amplitude as the effect of the drug wore off.

This example is illustrative of the effect in a great many dogs, in a state of shock from hemorrhage or trauma, which were resuscitated by means of ephedrine. The procedure was found so efficacious (even on the subcutaneous injection of 150 mg.) that it is used as a routine laboratory maneuver in animals in a condition of surgical shock.

The following abbreviated case reports are submitted as typical of the results obtained in a total of ten patients.

TABLE 1.—*Protocol of Case 1*

Date	Time, P. M.	Procedure	Blood Pressure: Systolic	Blood Pressure: Diastolic	Condition
1/26/29	3:15	.....	86	54	Conscious
	3:16	Repair of stumps started under ethylene anesthesia			
	3:30	During operation 500 cc. of saline solution and 7 minims of epinephrine were given intravenously	88	60	Anesthetized
	3:40	.....	68	48	Anesthetized
	3:50	Operation completed	..	..	Poor
	4:00	Retention enema of 2 ounces of 50% alcohol and 2 ounces of coffee	..	..	Comatose
	5:30	Caffeine sodiobenzoate 7½ grains subcutaneously	..	..	Comatose
	7:00	.....	70	30	Comatose
	7:15	250 cc. of 10% dextrose intravenously	..	..	Comatose
	7:34	20 mg. of ephedrine sulphate intravenously	..	..	Comatose
	7:40	.....	100	60	Mentally more active (talks to wife, etc.)
	8:00	Strychnine sulphate, 1 mg.			
1/27/29	A. M. 1:00	.....	110	70	Good
	8:00	.....	116	80	Good R.B.C. 2,130,000 W.B.C. 23,150 Hemoglobin 40%

REPORT OF CASES

CASE 1.—G., a white man, aged 26, a private patient of Dr. Hopkins, admitted to St. Luke's Hospital, Jan. 26, 1929, was said to have been in a railroad accident at 1:20 p. m. On examination the patient, who was conscious, appeared anemic, and there had been traumatic amputation of both legs at the lower third of the tibia and fibula.

The protocol is given in table 1.

The patient went on to complete recovery.

CASE 2.—K., a white man, aged 35, was admitted to St. Luke's Hospital with a history of having been thrown from a railroad car, striking his back on a rail. A diagnosis of a comminuted fracture of the ramus of the left pubis and a ruptured urethra was made. A retention catheter was left in the urethra and a suprapubic cystostomy was done by Dr. Fisk.

TABLE 2.—*Protocol of Case 2*

Date	Time, P. M.	Procedure	Blood Pressure: Systolic	Blood Pressure: Diastolic	Condition
3/19/29	1:00	Returned from operating room; hypodermoclysis, 2 liters	50	40	Comatose
	2:18	Ephedrine sulphate, 15 mg. intravenously			
	2:45	.....	74	58	Mentally more active
	2:55	.....	60	48	
	3:10	.....	80	60	
	3:11	Strychnine sulphate, 1/40 grain	..	..	Poor
	3:12	Ephedrine sulphate, 15 mg. intravenously			
	3:30	.....	80	60	Somewhat improved
	4:05	5% dextrose, 1 liter, intravenously			
	4:30	.....	96	70	
	10:00	.....	100	80	
3/20/29	A. M. 1:35	Strychnine sulphate, 1/40 grain intravenously	90	80	Condition worse
	1:36	Ephedrine sulphate, 30 mg., intravenously			
	1:40	.....	110	76	Mentally more active
	8:00	.....	110	80	

The patient was under observation for one month following treatment, during which time he showed progressive improvement.

CASE 3.—Mrs. N., a white woman, aged 45, admitted to St. Luke's Hospital for the repair of a cystocele and a rectocele, was operated on by Dr. Curtis, July 9, 1929, with a moderate loss of blood.

TABLE 3.—*Protocol of Case 3*

Date	Time, P. M.	Procedure	Blood Pressure: Systolic	Blood Pressure: Diastolic	Condition
7/ 8/29	9:00	.....	112	70	Excellent
7/ 9/29	A. M. 9:50	Returned from operating room	40	?	Poor but conscious
	9:55	Caffeine sodiobenzoate, 7½ grains; retention enema of coffee, 2 ounces, and 50% alcohol, 2 ounces			
	10:10	.....	50	?	
	11:00	.....	40	?	
	P. M. 12:30	.....	40	?	
	12:40	Ephedrine sulphate, 15 mg., intravenously			
	12:45	.....	70	50	Improved
	1:00	.....	76	50	Mentally more active
	2:15	.....	92	70	
	9:00	.....	106	80	Nervous and cannot sleep
7/10/29	A. M. 1:30	.....	114	70	

The patient went on to complete recovery. In this case the low blood pressure readings were checked by Dr. Gardener.

CASE 4.—R., a white man, aged 35, with a strong odor of liquor on his breath, was admitted to Dr. McArthur's service following an accident in which he was struck by an automobile. Examination revealed fractures of the left humerus, tibia and fibula and of the left eleventh and twelfth ribs.

The patient is going on to recovery, about one month since the accident.

13. Johnson, C. A.: Studies on the Knee Jerk: 1. A Simple, Dependable and Portable Knee Jerk Apparatus for Use on Higher Mammals and Man, Am. J. Physiol. **82**: 75 (Sept.) 1927.

COMMENT

The method of treatment of acute surgical shock or of shock due to hemorrhage when the predominant symptoms are low blood pressure, weak and thready pulse, and depression of the central nervous system has always been unsatisfactory as far as the use of drugs is concerned.

As a rule, in this type of shock a vicious circle is established in which depression of the blood pressure causes further depression of the central nervous system, and vice versa. In some instances it appears as if the central nervous system depression is the predominant factor which leads to loss of vasomotor tone with a lowering of blood pressure. In other cases the low blood pressure seems to be the essential factor with consequent central nervous system depression.

In the choice of a drug designed to overcome this vicious circle, several factors ought to be considered, the most important of which are as follows:

1. The drug should be nontoxic with a high margin of safety; i. e., a drug that will not cause a toxic reaction in already depressed circulatory and nervous systems.

TABLE 4.—*Protocol of Case 4*

Date	Time, P. M.	Procedure	Blood Pressure: Systolic	Blood Pressure: Diastolic	Condition
9/26/29	10:25	Morphine sulphate, ¼ grain, hypodermically	76	50	Semicomatose
	10:46	.....	80	54	
	10:47	Ephedrine sulphate, 15 mg., intravenously			
	10:50	.....	104	64	Mentally improved
	11:20	.....	110	74	
	A. M.				
9/27/29	8:00	.....	106	70	Mentally clear
	10:00	.....	120	90	

2. It should have a pronounced hemodynamic action as well as a marked stimulant action on the central nervous system.

3. These actions of the drug should be of a lasting character in order that the various body systems may regain the physiologic state lost by the previous inadequate circulation of blood through them. If the drug has a lasting action, time will be available for the institution of other supportive measures.

Ephedrine seems to exhibit these characteristics. An effective dose is nontoxic (Chen), and there is a prolonged action on the central nervous system which is not dependent on the blood pressure change, although the central action is probably enhanced by the increased blood flow through the depressed centers. In the cases cited I feel that the action of the ephedrine administered was sufficient to overcome the vicious circle established by the low blood pressures from hemorrhage or the depression of the central nervous system.

CONCLUSION

I have attempted to show by animal experiments and by case reports that ephedrine sulphate, used intravenously as part of the medication, is a useful drug in the treatment of acute traumatic shock and shock due to hemorrhage. I am inclined to believe that its prolonged action on the central nervous system is almost as important as its hemodynamic action in overcoming the vicious circle established by the low blood pressure or the depression of the central nervous system.

HYPERTENSION ASSOCIATED WITH ALLERGY *

GEORGE L. WALDBOTT, M.D.
DETROIT

Analysis of the vast amount of literature accumulated on the subject of essential hypertension makes it evident that many investigators share the opinion of Bell and Clawson,[1] who think that a uniform explanation of this clinical syndrome cannot be upheld at the present stage of our knowledge. Regardless of the cause, however, the mechanism is generally considered to be a vascular contraction, with some exciting agent producing the spasm. Some [2] assume a "hypothetic pressure substance" to be present in the blood, which contracts the wall of the arterioles. Others [3] are inclined to believe in a disturbance of the sympathetic nervous system as the main etiologic factor.

While capillary spasm has thus been identified with hypertension, a number of clinicians working in the field of allergy hold that a similar mechanism is responsible for certain manifestations of allergy. Vaughan [4] states that "angiospasm is the characteristic phenomen of anaphylaxis." Although definite proof of this fact is still lacking, Coca and his school have demonstrated that in anaphylaxis the blood contains substances which contract unstriped muscle tissue.

Indeed, there are several factors which point to some connection between hypertension and allergy. Migraine is now considered by many as being of allergic origin.[5] On the other hand, Westphal,[6] O'Hare [3] and others have found that migraine precedes the onset of essential hypertension for several months or years in about 50 per cent of their cases of hypertension. Kaufmann [7] asserts that sensitiveness to heat is an outstanding feature in the history of cases of essential hypertension. This symptom has also been proved by Duke [8] to be an allergic manifestation. Heredity, another factor which plays an important part in some forms of hypertension,[9] is regarded as a foremost clinical criterion in allergic diseases.

In order to establish clinical proof of the relation between allergy and hypertension, it would be necessary to demonstrate, first, the occurrence of both diseases in more than an incidental number of cases; second, the occurrence of hypertension without kidney involvement in a number of allergic families, and, third, the fact that control of the allergic factor influences the hypertension.

The literature on this problem is very meager. Kylin [10] described three cases in which bronchial

* From the Allergy Department of the North End Clinic.

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asthma and essential hypertension occurred simultaneously. Mosenthal [11] has made the unusual observation that in an individual with essential hypertension the blood pressure was decidedly lower as long as certain starchy foods were eliminated from the diet. The addition of these foods to the diet promptly increased the blood pressure. He was unable to offer an explanation for this apparently typical allergic phenomenon.

REPORT OF CASES

I have had occasion to observe two families in whom the combination of allergy and hypertension appeared to be of more than incidental occurrence. This is clearly illustrated by the family trees depicted in figures 1 and 2. The following data pertain to family H.:

CASE 1.—Miss B. H., aged 30, was seen, May 27, 1927, because of symptoms of an acute cystitis of two days' duration. The history of high blood pressure dated back four years, when at the age of 26 an insurance examination revealed a "blood pressure of 185" but, according to the patient's statement, without any albumin in the urine. She stated that she had had measles at the age of 7 and tonsillitis just previous to the onset of the cystitis. She said she was then given an injection of diphtheria antitoxin. Occasional dizziness, dull headaches, and a sensation of pressure around the heart were the only symptoms referable to the hypertension. These

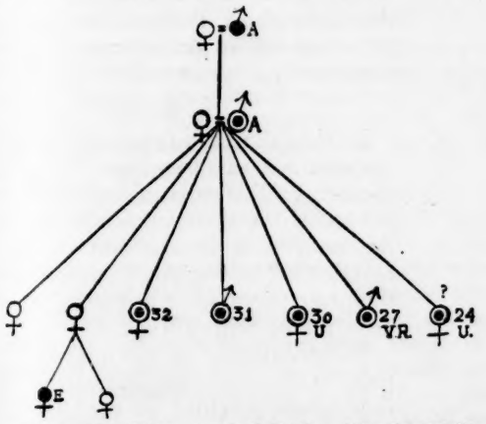

Fig. 1.—Family H.: There are individuals with allergic diseases in four generations. The normal signs for male (♂) and female (♀) denote the members without allergic manifestations; the black signs denote the members with allergic manifestations. When the circle has a black dot in it, the member of the family has "essential hypertension." The numbers next to these members indicate their respective ages. Note the relatively low ages in these cases. *A*, asthma; *E*, eczema; *U*, urticaria; *V. R.*, vasomotor rhinitis.

symptoms had been present for about four months, were usually more pronounced at the time of menstruation, and were not notably increased on exertion.

On examination the patient appeared moderately well nourished and healthy, 5 feet 2 inches (157.5 cm.) tall, and weighing 124 pounds (56 Kg.). The skin was mottled and there was a marked dermographia. The mucous membranes were somewhat pale. No edema was present. The retinal arteries were of normal appearance; the tonsils were small but ragged, and some pus could be expressed. The lungs were normal. The heart was slightly enlarged to the left, and the pulmonic sound was definitely accentuated. No murmurs were heard, the rhythm being regular. The blood pressure was 182 systolic and 119 diastolic. No striking visible pulsation of the arteries was present. The liver and spleen were not felt. Other organs were normal. The urine was acid, with a specific gravity of 1.022, and showed no albumin, sugar, casts or red blood corpuscles. Microscopically many leukocytes were seen. A complete blood count revealed nothing unusual except for an eosinophilia of 5 per cent.

The cystitis disappeared within two days on alkali therapy. The patient was given a diet low in protein and salt and free from seasoning. She was advised to stay in bed one day a week. In spite of this management, the blood pressure was 212 systolic and 115 diastolic, July 10, 1927. The patient was suffering considerably under the influence of the warm weather. July 15, she had a tonsillectomy. August 18, after the patient returned from the country where, as she stated, she had taken a great deal of rest, the blood pressure was 192 systolic and 112 diastolic. Both arms and the neck showed evidence of a second degree burn, presumably due to an unusual reaction of the skin on exposure to the sun in the country. During the height of the burn the urine showed two plus albumin and several granular casts, which subsided after two weeks.

On account of the presence of allergic disease in the patient's family, of the eosinophilia and of the abnormal reactability of the skin to light and heat, and especially because of an urticaria of two days' standing, the patient was subjected, September 19, to a series of skin tests. They revealed sensitiveness to milk three plus, peas two plus, beans two plus, salmon two plus, rice two plus and cocoa one plus. Elimination of these substances resulted in a distinct improvement of the subjective symptoms. September 28, the urticaria had disappeared and the blood pressure was 145 systolic and 92 diastolic, at about which level it remained for more than a year. The patient was seen several times during the spring and summer of 1928; the usual headaches and pressure sensation about the heart had disappeared.

Jan. 17, 1929, new laboratory data were obtained. A complete blood count showed nothing unusual, with absence of eosinophils. The phenolsulphonphthalein output was normal. The urine was normal; the blood nonprotein nitrogen was 35.3 mg. and the blood sugar 0.08 mg. per hundred cubic centimeters. The blood pressure then was 152 systolic and 90 diastolic.

While still following her diet, the patient presented herself, March 15, complaining of the reappearance of her former symptoms, the blood pressure being 195 systolic and 118 diastolic. The skin tests then showed a four plus sensitiveness to rabbit hair, two plus to horse and camel hair, and one plus to glue and coffee, while all the other formerly positive substances were negative. It was then learned that the patient was employed at a cleaning equipment house where most of these animal products were present. After nonattendance at business for two days, the blood pressure dropped to 152 systolic and 96 diastolic, March 22. March 29, the blood pressure was 185 systolic and 112 diastolic. The patient stated that she had taken some milk. April 2, the skin tests were repeated and showed sensitiveness to milk two plus, rabbit hair two plus, glue and coffee one plus. The blood pressure was 152 systolic and 107 diastolic.

During the summer of 1929, the patient adhered strictly to the allergen-free diet, but she was unable to change her occupation. Her blood pressure remained below 150 (systolic) except for one occasion, when it was found to be 165 systolic and 109 diastolic. October 19, the urine was normal, the blood pressure being 140 systolic and 108 diastolic.

The interesting feature of this case was the presence of a considerable degree of hypertension without kidney involvement in a patient who exhibited the following allergic manifestations: allergic family history, urticaria, unusual sensitivity of the skin to heat, eosinophilia, and positive skin tests. Although there was at times a distinct response of the hypertension to elimination of allergens, the blood pressure never decreased to a normal level. This may be explained on the basis of multiple sensitization, all the factors of which were not removed. Such results are frequently encountered in the management of patients with allergic diseases.

CASE 2.—A. H., a man, aged 27, a brother of patient 1, was found to have a blood pressure of "170 or 160" when examined four years before for insurance. Aside from occasional headaches which occurred following the eating of tomatoes, he had always been well. Aug. 18, 1928, a blood

11. Mosenthal, H. O.: Treatment of Essential Hypertension, J. A. M. A. **91**: 698-702 (Sept.) 1928.

pressure of 168 systolic and 118 diastolic was found; otherwise the examination was entirely negative. Laboratory procedures, including urinalysis, blood counts and chemical study of the blood, were entirely negative except for an eosinophilia of 3 per cent. There was a three plus skin reaction to tomatoes and strawberries, and one plus to wheat and fish. After these foods were eliminated for two weeks, the blood pressure came down to 128 systolic and 85 diastolic. The patient was not seen again until March 22, 1929, when he presented himself on account of a furuncle on the upper lip. The blood pressure then was 158 systolic and 98 diastolic. The patient stated that he had not adhered strictly to the diet because no symptoms were present.

CASE 3.—Miss L. H., aged 32, a sister of patient 1, gave a history of hemilateral headaches of the migraine type. Physicians had told her several years before that her blood pressure was high. No examination was permitted except a blood pressure reading, which was 154 systolic and 118 diastolic and a urinalysis, with no albumin and no casts.

CASE 4.—Miss R. H., aged 24, another sister of these patients, was treated in the spring of 1929 for an urticaria of several months' duration which came on following injections of "cold" vaccine. She was then sensitive to several foods. The blood pressure during this time was normal. However, in the records of another physician who had attended her about one year previously for some unknown gastro-intestinal disturbances which in all probability were of an allergic nature, a reading of 130 systolic and 90 diastolic was noted.

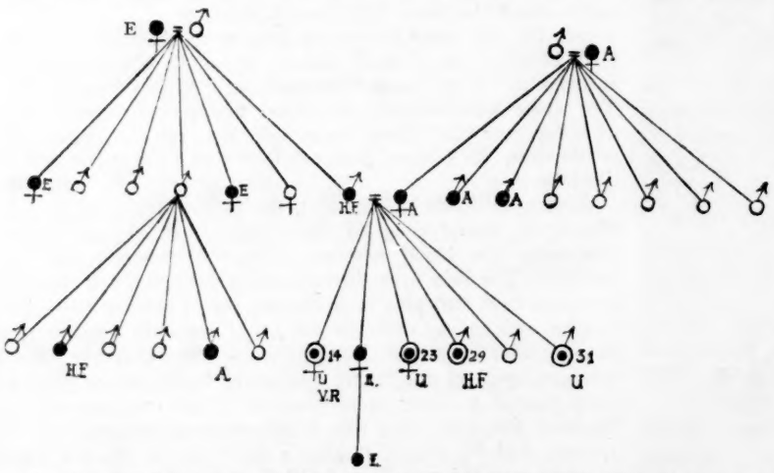

Fig. 2.—Family G.: The father and mother of the patients with "essential hypertension" (in the third generation) were of allergic inheritance and were both subject to hay-fever and asthma, respectively. Note the low ages of the patients with hypertension and the fact that every one of them was suffering from an allergic disease. *H. F.* indicates hay-fever; the other symbols have the same meaning as in figure 1.

CASE 5.—R. N. H., a man, aged 31, another brother, died, May 5, 1927, from the results of high blood pressure of apparently several years' standing. According to a letter from his attending physician and from the Battle Creek Sanitarium, which he attended previous to his death, he suffered from kidney and heart changes which were considered secondary to the hypertension. No allergic studies had been carried out in this case.

The father of these patients died in April, 1927, at the age of 62, from heart disease, chronic nephritis and hypertension. He had been under my observation for three months previous to his death on account of bronchial asthma and chronic (vasomotor) rhinitis, from which he had suffered for many years. The paternal grandfather had also been a sufferer from asthma and hay-fever.

The following is the record of one of the members of the family covered by figure 2:

CASE 6.—M. G., a girl aged 14, was found to have hypertension of 185 by a local physician whom she consulted on account of a "cold." A large number of the members of her family were afflicted with allergic diseases. The patient had had eczema when 6 months old, which was controlled at the time but had returned nearly every spring. Furthermore, she had urticaria whenever she ate cucumbers. Besides the history of occasional colds there were no noteworthy former diseases, and no symptoms were complained of that were referable to hypertension. The only conditions revealed by the examination, March 26, 1929, were mottled skin and some dermographia, enlarged tonsils, and a blood pressure of 192 systolic and 108 diastolic. Examination of the urine revealed a specific gravity of 1.012, no albumin or sugar, and a few epithelial cells and leukocytes. The skin tests revealed a three plus reaction to timothy and Russian thistle, two plus to cucumber and pumpkin and one plus to onion and dog hair. The patient was asked to eliminate these substances. She did not return until September 28, when the following laboratory procedures were carried out: a complete blood count, urinalysis, Kahn test, blood urea, nitrogen and sugar determinations and phenolsulphonphthalein test. The only noteworthy feature was an eosinophilia of 4 per cent. The blood pressure was 138 systolic and 92 diastolic.

This case also offers a clinical picture similar to that in case 1. The blood pressure of 192 in a girl 14 years of age, the normal kidney function, the history of former allergic manifestations, the presence of allergic disease as well as of hypertension in several members of the family, the eosinophilia, the positive skin tests and the response to an allergin-free management are the noteworthy characteristics.

COMMENT

During the past few years a number of unexplained diseases have been attributed to allergy (Rackemann). Indeed, some are led to believe that practically any organ of the body may be the seat of an allergic reaction. The bladder, ureter, gastro-intestinal tract, joints, meninges and uterus have been linked with allergy.

In speculating on the mechanism of the type of hypertension discussed, the question arises whether or not the capillaries of the kidneys are susceptible to the same allergic reaction as are the other organs with smooth musculature.

Another interesting problem may be mentioned in this connection. Kylin,[3] and Peterson, Levinson and Arguin [12] report that there is an inverted reaction to epinephrine in some patients with essential hypertension: instead of a rise in blood pressure they have observed a decrease following the administration of this drug. Such an inverted reaction can occasionally be demonstrated in allergic diseases, especially in urticaria. It remains to be seen whether or not this phenomenon may prove to be of diagnostic value in distinguishing the type of hypertension described here from other forms of hypertension.

SUMMARY

Evidence brought forth here indicates that some cases of unexplained hypertension may be caused by allergy.

In individuals of two families the syndrome of hypertension occurred in association with allergic diseases.

The few cases of "essential hypertension" recorded exhibited definite allergic features and showed improvement on an allergen-free management.

Therefore I believe that a certain number of cases of "essential hypertension" are allergic in origin

12. Peterson, W. F.; Levinson, S. R., and Arguin, S.: The Relation of the Reaction to Epinephrine to the Potassium-Calcium Ratio and Other Ratios, Arch. Int. Med. **42**: 256-269 (Aug.) 1928.

WHAT PRICE HEALING?

A FRAGMENTARY INQUIRY *

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NEW YORK

A recent striking experience has convinced me that its outlining may not be amiss. It deals with a situation that has been repeated several times in my clinical work. I would also briefly report two other cases of related significance and thus offer a contribution to the conception or idea that not infrequently an acute or even a chronic psychosis may follow the "cure," surgical chiefly, of a longstanding somatic disorder. There are a number of extremely valuable theoretical considerations underlying this general situation, enough in my opinion to justify the fragmentary presentation of these three cases.

CASE 1.—A colleague asked me to consult with him about "Miss G." She was suffering from a mild agitated depression. She had made one attempt at suicide by illuminating gas and had hovered dangerously near to a window ten stories above the ground. She had been acting queerly only about two or three weeks.

I obtained the following history, abbreviated so as to present the salient features:

Her father was Irish, her mother American. They were of the pioneer type, having settled in the Rockies where, in one of the leading western cities, the father built up a large and profitable business, one of the first in those days following the forty-niners. The oldest daughter, now 66, was born there. A second daughter, the patient, now 64, was born in the East; also a son, who would have been 62.

The father, having made his "pile," moved East, settled down and the three children were brought up decorously in one of our "quietest" of cities. The oldest girl was the lively one and is even now an active, loquacious, Irish type, still comely. The second girl was always a bit retiring. She was sweet and dutiful but was "nervous." She played the piano nicely and sang. She must have been quite pretty, as she is still a good looking woman. The son was a healthy boy. He married, had no children, and died at 53 of an apoplectic stroke. The oldest sister married at 23 but at 30 was left a widow. Having no children, she returned to the family home.

At 18 the patient made a runaway match against her parents' wishes. Apparently it was a great disappointment to her, as she returned home in less than a year, gave birth to a dead child, divorced her husband two years later, and remained at home. In 1912 the father and mother died at advanced ages, 79 and 76, and the two sisters lived on in the old home, much attached to each other, the younger being dependent on her more dominant, breezy, active, widowed sister. About six years ago they moved to New York. Their father's estate, in trust, left them modest but comfortable incomes. They did their own housekeeping, the patient usually doing the cooking, and they lived simply but nicely in a well appointed apartment on the West Side. They were much alone and apparently no men bothered them.

The family history reveals little. The father had diabetes and both the father and mother were of a nervous disposition.

As stated, the patient was a quiet, pleasing child. She was born normally, developed well, walked and talked at the proper time, and was able to read at 5. She had measles and mumps. She was bright, and showed no neurotic traits in childhood. She attended public and private schools until she was 18, when she made the marriage which apparently did not work. There were no other illnesses of any nature. She was 5 feet 3 inches (160 cm.) in height and of late years had grown heavy, weighing 180 pounds (81.6 Kg.).

She had one difficulty, however, which constitutes the main point of this story. I was unable to determine from her just when it began, but the sister thought that she had had it from childhood. She had to urinate at least every fifteen or twenty minutes. Since her marriage and the birth of the child it had been a chronic complaint, and in spite of all methods of treatment, not pursued with any great regularity, it had persisted. Naturally, her life was greatly hampered. She rarely went out and, if she did, only along certain specified routes where she knew she could find relief. This disorder tied her all the more to the sister, and they had lived their quiet lives alone for the past sixteen years.

In the earlier years the urinary urge had not been quite so frequent. Four months previous to my seeing her, my colleague was told about the bladder trouble—the patient had always been reticent—and he recognized its neurotic nature. He did not, however, endeavor to study its functional meaning or its value and proposed gradual bladder dilation as a cure. The bladder was certainly very much contracted, as the roentgen examination demonstrated. He began with gradual dilation by fluids and after six or seven weeks was able to double the size of the bladder, so that the patient could retain the urine for about four or five hours.

Shortly thereafter there began to be a gradual increase in restlessness and sleeplessness. The patient began to have a tense, worried look. Still she made no complaints. Then her sister noted more and more a hunted look on her face and the gradually increasing signs of worry and anxiety. At first no definite worries came to consciousness.

Then one day the sister found the patient in the kitchen sitting before the oven of the gas stove with the gas escaping, her head partly thrust in the oven. The patient complained of being worried. The anxious, harried look increased and a week or so later the patient began to edge up close to an open window and was leaning out when the sister pulled her back. All this time she was very quiet and but two series of ideas kept coming in her mind:

1. She had a plate of some false teeth in the upper jaw. She was constantly worrying lest she should lose a tooth that partly held the plate, so that the plate would drop out. This preoccupied her mind.

2. Also she worried lest her sister and she would get in trouble at the bank. She kept the accounts of their joint housekeeping, jotting down all their expenditures on a piece of paper from day to day. The sister drew the monthly checks to pay them. Her anxiety would center about the fact that she feared she had omitted some of the items. This would get them in trouble at the bank—what trouble, she could not state. It was just a vague anxiety.

On examination there were no outstanding neurologic anomalies. The pupillary reflexes were prompt and ample; the eyeballs moved freely, and there were no paralyses, speech disturbances or reflex disturbances anywhere. The blood pressure was normal. There were no toxic signs.

The patient was quiet, plainly anxious, and regarded me somewhat askance but answered questions and told me of her ideas in a low voice slightly slowed. All her movements were slowed, but she said that ideas raced through her head. She had no uncomfortable bodily sensations and apparently no hallucinations. She did not care to eat, but did eat and slept fitfully.

She presented the typical appearance of an involutional depression with anxiety.

From a whole group of possibilities in the interpretation of this case I wish to pick on one set of factors which constitutes the point to be emphasized in this presentation. As the other cases to be reported briefly show related situations, I believe I am justified in narrowing the search for the meaning of the psychosis to the factor to be mentioned.

When her physician cured this patient of her bladder trouble, quite unwittingly he took away something of vital importance to her. In a manner of speaking, he deprived her of her functional baby. In more strictly psychoanalytic terms he displaced, routed out, a source of unconscious erotic gratification. Where did it go? Briefly, into the psychosis!

* Read before the New York Psychoanalytic Society, Nov. 26, 1929.

This cannot be understood completely at this time. It is not necessary. One has but to recall that the "anxiety" is to be regarded as a defense against the emergence into consciousness of a forbidden type of erotic gratification. When the patient had her enuresis at hand to provide the gratification, even if its erotic quality was not appreciated, she was able to function, in view of the limited calls on her personality. Her little round of household duties did not demand much and her instinctual needs on the libidinous side had since childhood found a primitive source of fixation. It was evident that the hasty marriage was a futile gesture, the dead child served as a throw back, and the enuresis had played the rôle of a complete sexual equivalent. It probably fulfilled the full scale from urethral erotic to masturbatory and coitus needs. No effort is here made to attempt to prove all these contentions. Only one point may be offered in partial substantiation so far as the masturbatory substitution is concerned.

As is well recognized in modern and even in ancient psychopathology as so known, a delusional or even an obsessional mental state may be conceived of as having the same construction as a dream. Hence the fear of a tooth falling out can be put into the dream form. For years analyses have shown that dreams of tooth pulling and of teeth falling out have had masturbatory significance. Hence in applying this empiric finding to the patient's fear, one may say that, with the deprivation of the enuretic gratification, one of the things it covered up and gratified was a masturbatory wish. Now this craving threatened to come into consciousness and the censor repressed it with anxiety. It is not necessary here to go into the whole argument about the truth of this conception and all the reasons attached to it.[1]

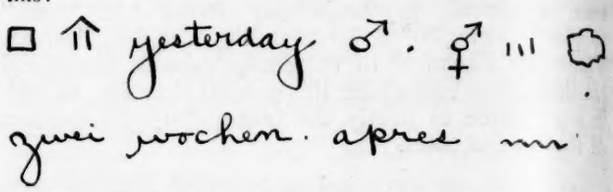
It has been proved over and over again, especially when a symptom in an hysterical person was supposed to have been cured, as a paralysis was by electricity, for instance, that it simply found a resting place—a displacement in some other part of the body. Numerous types of such displacements are known, and, unfortunately, even in so-called psychoanalysis, chiefly by lay analysts who are ignorant of the "body" and the psychic body scheme (Schilder), a conversion symptom, of often less significant nature, may be dispelled, with the result that the unanalyzed part of the individual's illness appears in another type of manifestation. A conversion symptom may prove the most economical and least dangerous type of symptom for a psychoneurosis to assume. But it is not my purpose to enter this complicated field further than to state that psychotherapy of disturbances of chiefly psychologic origin is a most vital and important kind of therapy. "Fools rush in where angels fear to tread" is more true of psychotherapy than of any other form of therapy.

It is interesting to note that, when medicine began to come out of the medieval quagmire, the first important restrictions were placed on surgical activities. Next the giving of medicines was accounted practice of medicine. At the present status of the actual laws of most of our states, any one can practice psychotherapy; that is, interfere with the most complex and most important of all human activities. During the late war a man with flat feet was excused from being even a private, but a man with a flat head might even be made a colonel. Such are the inconsistencies of life. "What fools we mortals be"!

1. Freud: Inhibition, Anxiety, and Symptom (English translation).

CASE 2.—Several years ago there came into my office an alert, neatly dressed, evidently well set up man of about 40. He was married, I gathered, but he was so reticent, first giving an assumed name, a false address and falsifying certain facts, that I was intrigued.

He was quite desirous that I should not make any notes of his case and only consented to my carrying out my usual routine when I showed him that I wrote my histories in a cryptic manner. I had certain arbitrary personal signs for certain things. I often introduced foreign words into the history. I used the Morse code and several languages and, showing him some lines of what he had told me, asked him to translate. Thus a confidence, not his, may I remark, might look like this:



which meant that the "patient went to a certain house the day before, met a man, had intercourse three times by rectum, and two weeks later had a chancre." Still he was not fully relieved, so I desisted and listened and wrote my history from memory later in the evening.

It did not take long to see that this was a case of subtle beginning paranoia, with delusional ideas of jealousy, suspiciousness, and some miserliness in a very neat person, with evident indication of the anal-erotic character in a fine type of individual.

The whole process had begun within three weeks after the patient had had a successful dilation of a functional esophageal stricture (cardiospasm).

I was unable to follow this case and cannot give a detailed history according to my notes, as one day, after four or five visits, he asked for the history notes as they contained, he said, some interesting literary material that he wished to work up, and "Mr. Green" departed from my professional horizon. When I see him at rare intervals in the Plaza grill, he dodges behind conveniently situated waiters.

I could write a book about the third case, as I have known the patient since our mutual childhoods. It was not the first I had observed but it was most striking. I shall present only a brief history.

CASE 3.—The father had been in the wholesale liquor business and was prosperous. The mother, beautiful and socially aspiring, had persuaded him to give up business; he retired in comfortable circumstances and soon died. There were four children. The oldest son, when about 24, a handsome, charming dilettante, fell in love with an attractive divorcée. Church circles regarded her with suspicion. There was some trouble and he committed suicide. My patient, the next child, was a bright and lively girl, active in church circles, and much admired for her verve, beauty and financial prospects. Her younger brother was a chum of a younger brother close to me. The youngest girl, a beautiful child of 12 or 13, died suddenly from what was rumored to be an imperforate hymen with septic poisoning. This was the setting when I was 16 and first knew the family. They were all close friends of my mother. It was a sad household by reason of the suicide of the oldest brother and the sudden death of the young girl.

Then there were vague rumors that the remaining daughter, now 18 or 20, was having difficulty in eating, and during the years I was studying medicine I learned that she regurgitated her food, became thin and gaunt, and was a cause of much anxiety at home. This continued and I heard of her from time to time. At about 25 or 26 she married an older man, a dealer in second hand building material, well to do but close, and had one son. The brother I now saw infrequently and heard rumors of periodic depressions alternating or interspersed with digestive disturbances.

Thus one may easily realize that there was something neurotic about the whole family. In this connection its further outlining on hereditary patterns is, I believe, unimportant.

Later I learned, after I was definitely asked to consult in the case, what I already had heard rumors of, that the girl had developed an esophageal diverticulum into which her food would first settle. When she had filled this she could eat and get food in the stomach. Later the fermentation in the diverticulum would cause regurgitation and so she went on for years, a chronic, thin, unhappy invalid, making her social rounds and attempting to carry on, for she had a lot of determination.

All this time innumerable attempts were made to effect a cure, but all were unsuccessful and she avoided a radical operation. Then, as far as I can reconstruct the history, two vents occurred more or less in close time relationship. The patient went to the . . . Clinic and was "cured," and the United States went into the war and her son volunteered.

She developed at first an acute anxiety situation with periods of wild restlessness. I saw her in the early stages, soon after her return from her healing process and before the most significant phases of her psychosis had broken through. It was then I was able to get some dream material and see what the esophageal diverticulum had stood for. I cannot go into this material now in detail; I must be granted my own interpretation. Needless to say, the father fixation was loaded, had passed to the suicidal brother, and had inaugurated the original regurgitation—rejection by neurotic conversion. The younger brother, handsome like his dead brother, entered into the picture as well. The marriage had held and had provided the opportunity for some psychosexual evolution, but the unsublimated part of the father cathexis now grew more and more diverted to the growing son. Among the dream fragments, the son figured distinctly on the Jocasta model.

Then when the son actually went to Europe, albeit in a distinctly diplomatic or noncombatant rôle, the psychosis took on a violent form. The patient attempted suicide by cutting her wrists. One dramatic escape out of a window which brought in the entire fire department of the district antedated her going to an institution, where after two or three years in strict confinement she made a social recovery and since then has improved, especially with the death of the husband, always an ambivalent factor in her anal eroticism. With the marriage of the son with two children at present, she has come more or less into placid waters.

Now the nub of this communication, to which I could add others in other gastro-intestinal fields stripped of many ifs and buts and ands, is to show what has been suggested by many another before me: that a chronic neurotic disorder is capable of building up definite tissue alterations in various organs of the body to satisfy through libidinal cathexis a status quo between the respective claims of the id and the ego. The primary organ neurosis, at first reversible and susceptible of cure or amelioration before the age of 40, by this time approximately has become irreversible, and what is designated as an organic disease. No amount of psychoanalysis can change the situation now and usually surgical therapy is needed.

When the patient by such therapy is cured of the organic disorder, without concomitant psychotherapy, and assuming that it has been a progressive cathectic process, then a pathologic displacement, substitution, projection or other type of mechanism is imperative. When the organism as a whole is not in adjustment and the brake, or eddy, or inhibiting investment has been released, a frozen credit becomes a liquid asset, as in the present instances, and the pressure is too great for the ego. Like the greedy investors in the recent stock debacle, who attempted to invest their paper liquid profits on a margin, down goes the whole defense and the psychotic adjustment becomes imperative.

64 West Fifty-Sixth Street.

Clinical Notes, Suggestions and New Instruments

DIPHTHERIA OF THE PENIS *

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Textbooks on dermatology,[1] urology,[2] medicine [3] and pediatrics [4] state that diphtheria of the genitals is rare. However, from the cases reported one learns that diphtheria of the genitals occurs at all ages, but more frequently in children than in adults. It is more common in the female than in the male, for out of fifty cases reported thirty-five were in the former. This paper refers chiefly to but one case of penile diphtheria, of which only fifteen could be found in the literature.

Generally, diphtheria of the penis is secondary to some other diphtheritic lesion in the body; nevertheless, several cases have been reported in which the infection was primary in the genitals. McCollum [5] reported two cases of secondary diphtheria of the penis. Bode [6] and Cochran [7] each reported one case of secondary diphtheria of the penis. The latter's case resulted in paralysis of the lower extremities. Post [8] was the first to describe a case of primary diphtheria of the prepuce. This case also resulted in paralysis of the upper and lower extremities. Riva-Rocci [9] described two cases of primary diphtheria of the prepuce. Prinzing [10] reported a case of primary diphtheria of the penis in which the infection was traced back to the wife of the patient, who had positive throat and vulvar cultures. Vasile [11] also reported a case of primary diphtheria of the prepuce. None of these patients were circumcised.

A number of cases of diphtheria of the penis reported in the literature occurred a few days after circumcision. Munn [12] reported three cases. O'Brien [13] and Beatty [14] each reported one case, and Kolmer [15] described two such cases. The latter found that out of 100 healthy boys from whom he took cultures by swabbing around the glans penis and the corona, 40 per cent were positive for diphtheria. Some of these organisms which were avirulent before circumcision became virulent after circumcision.

Our case is the first instance of diphtheria of the penis to be reported occurring in a circumcised person and not directly due to circumcision.

REPORT OF CASE

M. S., a boy, aged 7 years, admitted to the Municipal Contagious Disease Hospital, July 7, 1929, seemed well before

* From the Municipal Contagious Disease Hospital, Department of Health.

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9. Riva-Rocci, S.: Una localizzazione rara della difterite, Gazz. Med. Ital. **58**: 81 (March 24) 1907.
10. Prinzing, J. F.: Diphtheria of the Penis, J. A. M. A. **90**: 1620 (May 19) 1928.
11. Vasile, A.: Primary Diphtheria of the Prepuce, Pediatria **36**: 595 (June 1) 1928.
12. Munn, W. P.: True Diphtheria of the Penis, Pittsburgh M. Rev. **11**: 43 (Feb.) 1897.
13. O'Brien, R.: Diphtheria of the Glans Penis Following Circumcision, Brit. M. J. **2**: 908 (Oct. 5) 1907.
14. Beatty, R. P.: Diphtheria of the Glans Penis Following Circumcision, Brit. M. J. **2**: 1582 (Nov. 30) 1907.
15. Kolmer, J. A.: Diphtheroid Bacilli of the Penis with Report of Two Cases of Diphtheria Following Circumcision, Arch. Pediat. **29**: 49 (Feb.) 1912.

July 3, when suddenly he complained of a sore throat. He spent an uncomfortable night, and the next morning his lips were swollen and fissured and his tongue was edematous. During the day his lips became covered with sanguinopurulent exudate which formed scabs, so that the child was unable to open his mouth to take nourishment. The physician who was summoned diagnosed the case as tonsillitis and prescribed an ointment for the lips. The following day, July 5, the nostrils became swollen and covered with the same kind of exudate and scabs as on the lips. At the same time, the mother noticed that the penis was red and swollen, but the child did not complain of difficulty of micturition.

July 7, the boy was taken to the Sarah Morris Hospital for Children, where his case was diagnosed as diphtheria. There he was given 20,000 units of antitoxin and sent immediately to the Municipal Contagious Disease Hospital.

The physical examination, on admission to the Municipal Contagious Disease Hospital, revealed that the patient was somewhat undernourished, and critically ill with diphtheria, with oral, nasal and penile localization. There was a sanguinopurulent discharge from the nostrils; after they had been cleaned with an applicator, a grayish yellow exudate was seen firmly adherent to the nasal mucosa. The mouth was held open and the patient seemed unable to close it, because the lips were swollen, fissured and covered with heavy sanguineous crusts. The least attempt to make the child move his mouth was followed by profuse bleeding and a great deal of discomfort. The tongue and palate were covered with a bloody dirty grayish exudate. The throat could not be minutely examined because of the extensive edema. However, the soft palate was seen to have a dirty gray appearance. The neck was edematous and the anterior cervical glands were enlarged on both sides. The eyes and ears were normal. The chest and abdomen were essentially normal.

The boy had been circumcised in infancy, and the remains of the prepuce were red and edematous. There was a grayish yellow exudate firmly adherent to and extending from the remainder of the prepuce over to the edge of the corona of the glans penis. The latter was free from exudate but was slightly inflamed. The edema extended over the whole body of the penis so that the diameter of a cross-section of the shaft, especially at the prepuce, was about 4 cm. and the length of the penis was not more than 2 cm. There was no cutaneous abrasion or point of trauma visible. The scrotum was somewhat edematous, but it was neither red nor tender. The inguinal glands were enlarged and tender. The extremities did not show anything abnormal. There was no paralysis. All reflexes were normal.

The patient's temperature was 102 F. rectally; the pulse rate was 110, and the respiration 36.

Cultures taken from the nose, throat and penis were positive for diphtheria. The hemoglobin (Tallqvist) was 85. The blood count showed 4,980,000 red cells and 10,000 white cells. No differential count was made.

A diagnosis of labial, palatine, glossal, tonsillar, nasal and penile diphtheria was made, and the patient was given 40,000 units of antitoxin intramuscularly in addition to the 20,000 units received prior to admission. Ointment of rose water was used on the lips and boric acid dressings were applied to the penis.

The temperature fluctuated between 102 and 99 for several days after admission. July 10, the fourth day from the time he entered the hospital, the edema that was present on the lips, neck and penis was rapidly subsiding.

July 15, the temperature and pulse were normal. The lesions on the lips showed a marked improvement. The edema had subsided from the penis, which now appeared normal in size and shape. No scars were seen. Nose and throat cultures continued to be positive. The tongue was still covered with yellowish dirty exudate, giving it a geographic appearance. There were smooth red defined areas, irregular in shape, denuded of papilli, and resembling boiled calf's tongue. These were more prominent on the anterior third. These irregular areas were connected with one another and surrounded by elevated patches covered with dirty grayish white exudate, which was difficult to remove completely with an applicator. The patches were more numerous and extensive on the posterior two thirds of the tongue.

July 25, the tongue was smooth, red and denuded of papilli. All the grayish white areas previously observed had disappeared. The temperature was 98.8, the pulse rate 90, and respiration 22. The patient was permitted to be up and around. Nose and throat cultures were still positive.

July 30, the nose and throat cultures remained positive. A test demonstrated that the organisms were virulent to guinea-pigs. The tonsils, though small, were ragged, cryptic and diseased. Tonsillectomy was suggested for therapeutic purposes.

August 8, a tonsillectomy and adenectomy were performed. Nose and throat cultures taken after the operation were still positive to diphtheria. However, four days later, August 12, the child was discharged in good condition following two successive negative cultures of the nose and throat after forty days of illness.

COMMENT

Of approximately 14,000 cases of oral diphtheria observed and treated at the Municipal Contagious Disease Hospital since its opening in 1917, this is the first case in which a complicating diphtheria of the penis has been observed. Furthermore, we believe, this is the first reported case in which diphtheria of the penis occurred in a circumcised person long after circumcision. Whether the diphtheria of the penis in this instance was primary and simultaneous with oral diphtheria, or whether it was transmitted to the penis by way of oral or nasal discharges is difficult to decide. The extensive pathologic condition of the penis at the time of admission does not coincide with the brief duration of the illness. It is possible that the infection developed spontaneously on the penis, yet the child was unaware of the fact, for the lesion did not cause any discomfort. However, it is more probable that the diphtheria was transmitted to the penis by oral and nasal discharges, although no trauma was visible about the penis at the time of the patient's admission.

SUMMARY

In a case of diphtheria of the penis, recovery was complete following the administration of antitoxin.

We believe that this is the first reported case of diphtheria of the penis which occurred simultaneously or immediately following oral diphtheria.

According to the literature reviewed, this is the first case of diphtheria of the penis that developed years after circumcision.

25 East Washington Street.

CASE OF EPILEPSY SHOWING AN UNUSUAL PETIT MAL SYMPTOM

C. C. WHOLEY, M.D., PITTSBURGH

A man, aged 30, consulted me because of having had, during the preceding month, three major convulsive seizures. These were grand mal in character, occurred at weekly intervals an hour before arising in the morning, and were attended with biting of the tongue and once with bladder incontinence.

They were typical epileptiform seizures, though the man had apparently shown no previous indications of an epileptic constitution. Medical examination revealed no evidence of organic disturbance, nor any pathologic condition of the nervous system. He said that he had always been healthy. There was no history of birth trauma, infantile spasms, bedwetting or other frequent signs of an epileptic make-up. He was happily married, and life on the whole had gone smoothly. He had always been ambitious and serious minded but was oversensitive and somewhat asocial, not easily adapting himself to new situations.

Though the exhaustive examination brought out no previous indications of an epileptic make-up, I was not convinced, in view of the major convulsions, that such did not exist. Finally, during a routine ocular examination, the patient's wife casually remarked that at times, for several years, her husband had complained that things would suddenly look very small. The remark suggested an important though unusual pathognomonic symptom. It was learned that frequently during the previous

five years the patient's visual field would momentarily shrink to Lilliputian proportions; people would be only 10 or 12 inches high, and other things correspondingly small. The symptom had been regarded as a joke, until the patient had had to give up driving his car because the micropsia began to last several minutes. This more prolonged visual disturbance had been occurring for three months, but the patient had not thought the matter worth mentioning. It was found that during these three months he had been under a terrific mental strain. A competitor for his position had appeared, and in his anxiety over the matter he had overworked and lost much rest.

Micropsia is recognized as one of the numerous ways in which petit mal may express itself, and the rather inelastic self-centered type of personality which this patient exhibited is commonly regarded as expressive of the epileptic constitution. In the light of such antecedent epileptic indicators, the major convulsions are understandable. The grand mal attacks represented the complete expression or outbreak of latent tendencies coming to the surface under stress of prolonged anxiety and fatigue.

The case is reported as illustrative of a rather large group of individuals who more or less specifically present latent epileptic tendencies which, under stress, may develop into the graver major manifestations. Prophylactic and preventive measures may, I believe, be efficacious in many such cases.

1224 Westinghouse Building.

OBSERVATIONS IN ONE HUNDRED CASES OF SMALLPOX

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Over a period of four months, from Oct. 22, 1929, to Feb. 23, 1930, 100 patients with smallpox were quarantined. The ages of the patients ranged from 4 weeks to 87 years. The average age in this series of cases was 30 years. Twenty-nine of those under quarantine were school children, the average age being 10 years.

Of the 100 patients, only six had been previously vaccinated. One of these was a woman, aged 60, who had two vaccination scars, the last one dating back forty-seven years. This patient had a relatively mild type of the disease, less than a dozen pustules developing, and scarcely any prodromal symptoms preceding the eruption. On the other hand, a man, aged 44, a laborer, had a well defined eruption with many pustules, although he had been successfully vaccinated about eight years previously. A modified type of eruption was noted in a man, aged 50, who had been successfully vaccinated more than thirty years before. While this patient showed typical prodromal symptoms, the eruption was scanty, the pustules being somewhat superficial, mostly on the face. Another patient, a woman, aged 84, who had been previously vaccinated more than seventy years before, had typical prodromal symptoms and a well defined eruption over the body.

The majority of the cases, especially in children, were of a mild or moderate type. Several cases were noted in which the eruption was very scanty and of a modified character. Five cases in adults were of the confluent type, showing a pronounced eruption with secondary fever. No deaths were directly recorded, but two deaths which resulted from chronic diseases were apparently influenced by the smallpox.

CONCLUSIONS

1. In the 100 cases recorded here the relatively mild or moderate type of smallpox prevailed in the majority, especially in children.

2. A surprising degree of ignorance, superstition, prejudice and indifference to vaccination exists among a considerable proportion of the population even when smallpox appears in a community.

3. There is need of more widespread publicity and education as to the dangers of smallpox, with emphasis on the heavy economic loss sustained by the patient and his family while under quarantine.

4. The value of wholesale vaccinations in schools, factories and stores as early as possible when smallpox begins to prevail in a community is apparent as the most effective weapon to check an epidemic.

5. There is urgent need in many states of definite laws requiring the vaccination of all school children when entering school.

6. The purity of the vaccine and the improved technic of vaccination at the present time as compared to twenty or twenty-five years ago should lead to an increasing number of vaccinations. In more than 16,000 men, women and children vaccinated in this city in the past four months, not a single fatality or any serious consequences have resulted.

633 Maine Street.

Special Article

THE "HIGH CALORIC" DIET *

A. J. BEAMS, M.D.
AND
E. M. GERAGHTY
CLEVELAND

Atony of the stomach with gastroptosis, we believe, is often the result of undernutrition. It is observed usually in nervous individuals who have been the subject of worry, excitement or mental depression and it may occur as the result of bad habits of eating and the consumption of indigestible foods. It is also often secondary to certain chronic diseases such as tuberculosis and typhoid in which there occurs great loss of weight.

Since undernutrition appears to be an important cause in this condition, the diet indicated for remedial purposes should provide meals of moderate bulk, but of foods easily and readily digested and such as will cause little gastric disturbance. We wish to include a high measure of fat and to restore tone to the gastric tract.

The method used for making up suggested menus for "reducing diets" might also be used for cases of gastric atony, although the aim is the reverse of reducing.

GENERAL SUGGESTIONS FOR A "HIGH CALORIC" DIET

1. No change in weight, either addition of weight or reduction of weight, should be attempted without consulting a physician.

2. A reasonable amount of outdoor exercise should be taken; this will also tend to increase appreciation of food.

3. Each person must have individual attention to the diet, but, generally speaking, the caloric range should be from 3,000 to 4,500 calories.

4. The increased food intake should be planned to extend over a period of months.

5. It should be remembered that the calories are not the only measuring stick for our food.

6. The protein content should not be less than 50 Gm., except in an unusal condition.

7. A pint of milk should be taken daily.

8. Vitamins should be included: (*a*) from whole milk, cream, butter or eggs; (*b* and *c*) from fruits and vegetables.

9. There should be sufficient bulk to induce normal bowel action every day.

10. Since excessive bulk is not desired, fats and sugar must be depended on for the increased calories.

11. The daily intake should be divided up among six feedings whenever possible.

* This is a chapter from a book by Dr. C. D. Christie, Dr. A. J. Beams and Miss Geraghty to be published shortly by the American Medical Association.

The foods listed are those suggested in table 1 for the diet. Suitable menus are presented in the subsequent tables.

TABLE 1.—*Suggested Foods for the "High Caloric" Diet* *

	Amount	Grams Protein	Calories
Beverages			
Buttermilk	6 ounces	5	62
Cocoa	6 ounces	6	160
Chocolate	6 ounces	7	229
Chocolate egg and milk shake	6 ounces	11	216
Eggnog	6 ounces	10	183
Chocolate malted milk	6 ounces	13	242
Kaffee Hag	6 ounces		
Malted milk	6 ounces	11	252
Milk	6 ounces	6	128
Milk and cream	6 ounces (3 ounces of each)	6	250
Postum	6 ounces		8
S. M. A. (single strength)	6 ounces	3	125
Soups			
Cream of asparagus soup	Average serving	4	180
Cream of celery soup	Average serving	3	119
Cream of lima bean soup	Average serving	12	334
Cream of mushroom soup	Average serving	7	205
Cream of pea soup	Average serving	6	155
Cream of potato soup	Average serving	10	322
Cream of spinach soup	Average serving	8	203
Lettuce soup	Average serving	10	332
Split pea soup	Average serving	19	476
Oyster stew	Average serving	11	201
Vegetable soup	Average serving	1	139
Breads and Crackers			
Entire wheat bread	1 slice 4½ by 3½ by ½ inches	2	64
Linn's vitamin whole wheat bread	1 slice ⅜ inch thick	3	77
Rye bread	1 slice 4½ by 3¼ by ½ inches	3	76
White bread	1 slice 4½ by 4¼ by ½ inches	3	76
Graham crackers	1 cracker	1	37
Soda crackers	1 cracker	1	33
Zwieback	1 piece	1	33
Eggs			
Creamed eggs	Average serving	9	192
Eggs à la goldenrod	Avearge serving	12	344
Hard cooked eggs	1 egg	6	78
Omelet	1 egg plus 1 tablespoonful butter	6	195
Poached egg	1 egg plus 1 teaspoonful butter	6	114
Soft cooked egg	1 egg plus 1 teaspoonful butter	6	114
Egg timbales	Average serving	7	140
Fats			
Bacon fat	1 tablespoonful		135
Butter	1 tablespoonful		117
Cream, coffee	4 tablespoonfuls	2	124
Cream, heavy	2 tablespoonfuls	0.5	107
Salad oil	4 tablespoonfuls		540
Cereals			
Bran flakes	½ cup	4	108
Corn flakes	½ cup	1	44
Cornmeal	½ cup	1	70
Cream of wheat	½ cup	2	66
Grapenuts	¼ cup	4	105
Malt breakfast food	½ cup	3	71
Pettijohns	½ cup	2	88
Puffed rice	½ cup	0.5	26
Puffed wheat	½ cup	1	24
Ralstons	½ cup	2	71
Rice	½ cup	2	87
Rolled oats	½ cup	3	72
Shredded wheat biscuit	1	3	100
Wheatena	½ cup	4	78
Desserts			
Apple snow and custard sauce	Average serving	7	221
Apricot whip	Average serving	2	111
Bread pudding	Average serving	7	243
Brown Betty	Average serving	2	313
Cornstarch pudding	Average serving	7	246
Custard	Average serving	7	154
Gelatin (average)	4 ounces	4	159
Graham whip	Average serving	7	277
Ice cream	Average serving	3	247
Malted milk custard	Average serving	10	227
Prune whip	Average serving	9	141
Rice pudding no. 1	Average serving	8	221
Spanish cream	Average serving	9	160
Sponge cake	Average serving	5	216
Tapioca cream	Average serving	4	172
Loganberry ice	Average serving		152
Apple tapioca	Average serving		138
Fruits			
Baked apples	1		117
Jellied apples	Average serving	2	124
Apple sauce	Average serving		107
Apricots (canned)	2 halves and 3 tablespoonfuls juice	1	91
Apricots (fresh)	3	1	56
Apricots (dried and stewed)	3 halves	1	50
Avocado pears	½ average pear	2	136
Cantaloupe	½ small	1	60
Figs (fresh)	2 figs (medium)	2	81
Figs (dried and stewed)	2	2	128
Loganberries (canned)	Average serving	No figures available	
Peaches (canned)	½ plus 1½ tablespoonfuls juice	1	35

TABLE 1.—*Suggested Foods for the "High Caloric" Diet—Continued*

	Amount	Grams Protein	Calories
Peaches (fresh)	1	1	44
Pears (canned)	½ plus 3 tablespoonfuls juice		87
Pears (fresh)	1	1	44
Prunes (dried and stewed)	6 prunes	1	140
Red raspberries (canned)	½ cup	No figures available	
Red raspberries (fresh)	½ cup		36
Strawberries (canned)	½ cup	1	99
Strawberries (fresh)	½ cup	1	33
White cherries (canned)	8 cherries and 3 tablespoonfuls juice	1	90
†Grapefruit	½ medium	1	30
†Orange, large	1	1	60
†Orange, medium	1	1	40
Fruit Juices			
Red cherry juice (canned)	6 ounces	No figures available	
Lemon juice	1 tablespoonful		1
Loganberry juice (not diluted)	2 ounces		75
Orange juice	6 ounces	1	69
Pineapple juice (canned)	6 ounces	1	277
Strawberry juice (canned)	6 ounces	1	177
Vegetables			
Asparagus loaf	Average serving	7	148
Asparagus	8 stalks plus 1 teaspoonful butter	1	48
Celery	4 pieces 5 inches long		8
Asparagus soufflé	Average serving	8	168
Lima beans	½ cup plus 1 teaspoonful butter	8	192
Stringbeans	½ cup plus 1 teaspoonful butter	1	52
Waxbeans	½ cup plus 1 teaspoonful butter	1	50
Beets	½ cup diced plus 1 teaspoonful butter	2	74
Carrots	½ cup plus 1 teaspoonful butter	1	70
Dandelion greens	½ cup plus 1 teaspoonful butter	1	71
Egg plant	½ cup plus 1 teaspoonful butter	1	60
Okra	½ cup plus 1 teaspoonful butter	1	63
Peas	½ cup plus ½ teaspoonful butter	4	112
Soufflé of peas	Average serving	9	177
Stuffed baker potato	1	5	150
Baked potato	1	3	124
Mashed potatoes	½ cup plus 1 teaspoonful butter	2	118
Squash	½ cup plus 1 teaspoonful butter	2	86
Spinach (puréed)	½ cup plus 1 teaspoonful butter	2	101
Spinach soufflé	Average serving	10	265
Swiss chard	½ cup plus 1 teaspoonful butter	2	55
Salads			
Apple	Average serving	1	534
Apple and orange	Average serving	2	578
Asparagus	Average serving	1	495
Egg	Average serving	7	164
Endive	Average serving		491
Fruit	Average serving	1	562
Jellied Waldorf	Average serving	2	508
Lettuce	Average serving	1	481
Orange	Average serving	1	553
Orange and almond	Average serving	3	559
Romaine	Average serving	1	491
Vegetable no. 2	Average serving	3	579
Waldorf (no nuts)	Average serving	1	502
Watercress	Average serving		499
Watercress and orange	Average serving	1	559
Salad Dressings			
French	4 tablespoonfuls		480
Mayonnaise	4 tablespoonfuls	1	472
Whipped cream dressing	6 tablespoonfuls	2	184
Meats and Fish			
Creamed chicken	Average serving	13	233
Boiled chicken	4 ounces	23	268
Roast chicken	4 ounces	23	268
Roast lamb	4 ounces	28	256
Broiled lamb chop	3 ounces	16	250
Roast beef	2 ounces	12	190
Broiled steak (tenderloin)	1 piece 3½ by 3 by ¾ inches	17	280
Crisp bacon	3 strips 5 inches long	5	113
Baked fish (average)	Average serving	12	138
Creamed fish	Average serving	19	183
Cheese			
Cottage cheese	2 tablespoonfuls	6	28
Cream cheese	½ cake	2	248
Jams and Jellies			
Apple jelly	1 tablespoonful		63
Currant jelly	1 tablespoonful		63
Mint jelly	1 tablespoonful		63
Cherry jam	1 tablespoonful		66
Raspberry jam	1 tablespoonful		66
Strawberry jam	1 tablespoonful		66

* None of these foods should be fried. Use as much cream and butter or bacon fat as can be taken acceptably.

† If allowed by physician.

HOW TO PREPARE FOODS SUGGESTED FOR THE "HIGH CALORIC" DIET

CHOCOLATE EGG AND MILK SHAKE (1 serving)

Materials:

1 egg
1 teaspoonful sugar
1½ tablespoonfuls cocoa paste
½ cup milk
Few drops vanilla

Method:

1. Mix egg, sugar and cocoa paste
2. Add milk and vanilla and stir well
3. Strain into glass

Total recipe: protein, 11 Gm.; fat, 12 Gm.; carbohydrate, 13 Gm.; calories, 216.

ALBUMINIZED ORANGEADE

Materials:

2 egg whites
5 tablespoonfuls orange juice
1 tablespoonful sugar syrup
½ tablespoonful lemon juice
⅛ teaspoonful salt
2 tablespoonfuls crushed ice

Method:

1. Stir egg whites with fork until albumin cells are broken
2. Mix other ingredients, except ice
3. Pour liquid slowly over egg whites
4. Put crushed ice into glass
5. Strain egg white and orange syrup mixture over ice
6. Serve at once

Total recipe: protein, 6 Gm.; fat, —; carbohydrate, 13 Gm.; calories, 77.

TABLE 2.—*Menus Employing the "High Caloric" Diet*

	Amount	*Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Fresh peach	1	1	..	10	44
cream	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Pettijohns	½ cup	2	..	20	88
cream	4 tablespoonfuls	1.6	12	2.5	124
sugar	2 teaspoonfuls	..	..	10	40
Soft cooked egg	1	6	6	..	78
butter	1 tablespoonful	..	13	..	117
Toast	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
Kaffee Hag					
cream	1½ tablespoonfuls	0.7	4.5	0.7	46
sugar	2 teaspoonfuls	..	..	10	40
Midmorning					
*Chocolate egg and milk shake	6 ounces	11	12	13	216
Graham crackers	2	2	2	12	74
Lunch					
Split pea soup	Average serving	19	23	48	476
soda crackers	2	2	2	10	66
*Eggs à la goldenrod	Average serving	12	22	24	344
Ice cream	Average serving	3	19	17	216
Milk	6 ounces	6	7.5	9	128
Midafternoon					
*Loganberry ice	Average serving	..	..	39	156
Graham crackers	2	2	2	12	74
Dinner					
Roast chicken	2 ounces	12	10	..	134
Mashed potatoes	Average serving	2	4	18	118
butter	1 tablespoonful	..	13	..	117
Beets	½ cup	2	4	8	74
Puréed Swiss chard	½ cup	2	4	3	55
Entire wheat bread	1 slice	2	..	14	64
butter	1 tablespoonful	..	13	..	117
Orange salad	Average serving	1	53	18	553
Applesnow and custard sauce	Average serving	8	8	31	221
Kaffee Hag					
cream	1½ tablespoonfuls	0.7	4.5	0.7	46
sugar	2 teaspoonfuls	..	..	10	40
Evening					
Cream of spinach soup	6 ounces	8	14	10	203
Soda crackers	2	2	2	10	66
		112	274	382	4440

* The method of preparing the foods so designated in these tables is described elsewhere in this series of articles.

ORANGE JUICE

Materials:

¾ cup orange juice

Method:

Serve very cold but without ice or sugar

Total amount: protein, 1 Gm.; fat, —; carbohydrate, 16 Gm.; calories, 69.

POSTUM (INSTANT)

Materials:

1 teaspoonful instant postum
1 cup boiling water

Method:

1. Place postum in scalded pot
2. Pour boiling water on slowly, stirring constantly
3. Serve at once

TABLE 3.—*Menu Employing "High Caloric" Diet*

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Stewed prunes	6	2	..	34	140
cream	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Rolled oats	½ cup	3	1	13	74
cream	4 tablespoonfuls	1.6	12	2.5	124
sugar	2 teaspoonfuls	..	..	10	40
Poached egg	1	6	6	..	78
butter	1 tablespoonful	..	13	..	117
toast	½ slice	1.5	..	8	38
Crisp bacon	3 strips 5 inches long	5	11	..	113
Toast	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
Cocoa	6 ounces	6	7	19	160
Midmorning					
Buttermilk	6 ounces	5	0.7	9	62
Graham crackers	2	2	2	12	74
Butter	1 tablespoonful	..	13	..	117
Lunch					
Thick vegetable soup	Average serving	1	11	10	139
Soda crackers	2	2	2	10	66
Creamed chicken	Average serving	13	18	6	233
Toast	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
Baked apple	1	..	1	27	117
cream	2 tablespoonfuls	8	6	1.2	62
Milk	6 ounces	6	7.5	9	128
Midafternoon					
S. M. A.	6 ounces	3	7	13.5	125
Dinner					
Broiled steak	3½ by 3 by ¾ inches	17	25	..	289
*Stuffed baked potato	Average serving	5	2	28	150
butter	1 tablespoonful	..	13	..	117
Carrots	½ cup	1	4	7	70
Asparagus	8 stalks	1	4	2	48
Entire wheat bread	1 slice	2	..	14	64
butter	1 tablespoonful	..	13	..	117
*Romaine salad	Average serving	1	52	5	491
Spanish cream	Average serving	9	8	14	160
Kaffee Hag					
cream	1½ tablespoonfuls	0.7	4.5	0.7	46
sugar	2 teaspoonfuls	..	..	10	40
Evening					
Apple sauce	Average serving	..	1	25	107
Toast	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
		105	288	344	4367

HOT CHOCOLATE (4 servings)

Materials:

1 square Baker's chocolate
4 tablespoonfuls sugar
3 cups milk

Method:

1. Put chocolate in top of double boiler and allow to melt
2. Add sugar and stir
3. Then mix in milk
4. Add a few grains of salt if liked
5. When entire mixture is very hot, beat with a Dover egg beater
6. Serve at once

Total recipe: protein, 28 Gm.; fat, 43 Gm.; carbohydrate, 105 Gm.; calories, 919.

One serving: protein, 7 Gm.; fat, 11 Gm.; carbohydrate, 26 Gm.; calories, 229.

LETTUCE SOUP (1 serving)

Materials:

1 teaspoonful rice
¾ cup milk
⅓ cup lettuce (chopped)
1 stalk celery (chopped)
1 tablespoonful butter
1 egg yolk
¼ teaspoonful salt

Method:

1. Wash rice
2. Scald the milk in a double boiler
3. Add rice, chopped lettuce and celery
4. Cook thirty minutes over water
5. Add melted butter and beaten egg yolk
6. Add salt
7. Remove from fire and serve at once

Total recipe: protein, 10 Gm.; fat, 27 Gm.; carbohydrate, 14 Gm.; calories, 332.

TABLE 4.—*Menu Based on "High Caloric" Diet*

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Fresh pear	1	1	..	10	44
Ralstons	½ cup.	3	..	14	74
cream	4 tablespoonfuls	1.6	12	2.5	124
sugar	2 teaspoonfuls	..	..	10	40
Omelet	1	6	6	..	78
butter	1 tablespoonful	..	13	..	117
Toast	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
Kaffee Hag					
cream	1½ tablespoonfuls	0.7	4.5	0.7	46
sugar	2 teaspoonfuls	..	..	10	40
Midmorning					
Eggnog	6 ounces	10	11	11	183
Soda crackers	2	2	2	10	66
butter	1 tablespoonful	..	13	..	117
Lunch					
Cream of asparagus soup	Average serving	4	14	10	180
soda crackers	2	2	2	10	66
Hard cooked egg	1	6	6	..	78
Rye bread	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
Apricot whip	Average serving	2	..	26	111
Milk	6 ounces	6	7.5	9	128
Midafternoon					
Ice cream	Average serving	3	19	17	246
Graham crackers	2	2	2	12	74
Dinner					
Roast beef	4 by 3 by ¼ inches	12	16	..	190
Mashed potato	½ cup	2	4	18	118
butter	1 tablespoonful	..	13	..	117
Peas	½ cup	4	7	10	112
Puréed swiss chard	½ cup	2	4	3	55
Entire wheat bread	1 slice	2	..	14	64
butter	1 tablespoonful	..	13	..	117
*Jellied Waldorf salad	Average serving	2	52	8	568
Ice cream	Average serving	3	19	17	246
Kaffee Hag					
cream	1½ tablespoonfuls	0.7	4.5	0.7	46
sugar	2 teaspoonfuls	..	..	10	40
Evening					
Baked apple	1	..	1	27	117
Toast	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
Milk	6 ounces	6	7.5	9	123
		92	292	312	4249

VEGETABLE SOUP (WITHOUT MEAT)
(6 servings)

Materials:

- ⅓ cup carrots
- ⅓ cup peas
- ½ cup celery
- 1½ cups potatoes
- 1 quart water
- 5 tablespoonfuls butter
- ½ tablespoonful chopped parsley
- Salt

Method:

1. Mix all vegetables except potatoes
2. Cook mixed vegetables ten minutes in 3 tablespoonfuls butter, stirring frequently
3. Add potatoes and cook five minutes longer
4. Add water
5. Cook one hour
6. Beat with fork to break up vegetables
7. Add remaining butter and parsley
8. Strain through a coarse sieve
9. Serve at once

Total recipe: protein, 8 Gm.; fat, 65 Gm.; carbohydrate, 54 Gm.; calories, 839.

One serving: protein, 1 Gm.; fat, 11 Gm.; carbohydrate, 9 Gm.; calories, 139.

FISH CHOWDER (4 servings)

Materials:

- 1 lb. codfish
- 1 cup potatoes cut in cubes
- 1 sliced onion
- 1 cube fat salt pork
- 1 tablespoonful butter
- 1 cup milk
- 1 teaspoonful salt
- ⅛ teaspoonful pepper

Method:

1. Cut fish into small pieces
2. Cover with cold water
3. Bring slowly to boil
4. Parboil potatoes in boiling water
5. Drain and add to fish
6. Cook onion with salt pork five minutes
7. Add to fish
8. When potatoes and fish are done, add butter, milk, salt and pepper
9. Reheat before serving

Total recipe: protein, 99 Gm.; fat, 42 Gm.; carbohydrate, 41 Gm.; calories, 1,018.

One serving: protein, 25 Gm.; fat, 11 Gm.; carbohydrate, 10 Gm.; calories, 254.

TABLE 5.—*Menu Employing "High Caloric" Diet*

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Stewed apricots	3 halves	1	..	11	50
cream	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Cream of wheat	½ cup	2	..	14	64
cream	4 tablespoonfuls	1.6	12	2.5	124
sugar	2 teaspoonfuls	..	..	10	40
Soft cooked egg	1	6	6	..	78
butter	1 tablespoonful	..	13	..	117
Toast	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
Kaffee Hag					
cream	1½ tablespoonfuls	0.7	4.5	0.7	46
sugar	2 teaspoonfuls	..	..	10	40
Midmorning					
Cocoa	6 ounces	6	7	19	160
Toast	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
Lunch					
Cream of celery soup	Average serving	3	9	7	119
Soda crackers	2	2	2	10	66
Crisp bacon	3 strips 5 inches long	5	11	..	113
Entire wheat bread	1 slice	2	..	14	64
butter	1 tablespoonful	..	13	..	117
Brown Betty	Average serving	2	11	51	313
cream	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Milk	6 ounces	6	7.5	9	128
Midafternoon					
Malted milk	6 ounces	11	10	29	253
Dinner					
Roast lamb	2 ounces	14	8	..	128
Baked potato	1	3	..	28	124
butter	1 tablespoonful	..	13	..	117
Squash	½ cup	2	4	10	86
Stringbeans	½ cup	1	4	3	52
Entire wheat bread	1 slice	2	..	14	64
butter	1 tablespoonful	..	13	..	117
Lettuce salad	Average serving	1	52	3	481
Loganberry ice	Average serving	..	..	39	156
Kaffee Hag					
cream	1½ tablespoonfuls	0.7	4.5	0.7	46
sugar	2 teaspoonfuls	..	..	10	40
Evening					
Ice-cream	Average serving	3	19	17	246
Sponge cake	Average serving	5	2	45	216
		88	264	401	4314

MALT BREAKFAST FOOD (4 servings)

Materials:

- ½ cup malt breakfast food
- 2 cups boiling water
- Salt

Method:

1. Add malt breakfast food to boiling salted water and cook over flame five minutes, stirring constantly
2. Put over double boiler and cook two hours

Total recipe: protein, 11 Gm.; fat, 1 Gm.; carbohydrate, 58 Gm.; calories, 285.

One serving: protein, 3 Gm.; fat, —; carbohydrate, 15 Gm.; calories, 71.

FRENCH OMELET (1 serving)

Materials:

1 egg
Small amount parsley
1 tablespoonful butter

Method:

1. Beat egg until smooth
2. Put butter in small frying pan
3. When butter is hot, pour in egg
4. When egg begins to set, lift on side and let uncooked part run under
5. When all is firm, start rolling at one side and roll to other
6. Remove to hot platter and garnish with parsley

Total recipe: protein, 6 Gm.; fat, 19 Gm.; carbohydrate, —; calories, 195.

TABLE 6.—*Menu Based on "High Caloric" Diet*

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Cantaloupe	½	1	..	14	60
Malt breakfast food	½ cup	3	..	15	71
cream	4 tablespoonfuls	1.6	12	2.5	124
sugar	2 teaspoonfuls	..	..	10	40
Crisp bacon	3 strips 5 inches long	5	11	..	113
Toast	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
*Chocolate	6 ounces	7	11	26	229
Midmorning					
Milk and cream	6 ounces	6	22	8	249
Graham crackers	2	2	2	12	74
Lunch					
Cream of pea soup	Average serving	6	10	9	155
Soda crackers	2	2	2	10	66
Rye bread	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
Custard	Average serving	7	8	14	154
Milk	6 ounces	6	7.5	9	128
Midafternoon					
Custard	Average serving	7	8	14	154
Milk	6 ounces	6	7.5	9	128
Dinner					
Boiled chicken	4 ounces	23	19	..	268
Rice	½ cup	2	..	20	87
butter	1 tablespoonful	..	13	..	117
Asparagus	8 stalks	1	4	2	48
Carrots	½ cup	1	4	7	70
Entire wheat bread	1 slice	2	..	14	64
butter	1 tablespoonful	..	13	..	117
Apple salad	Average serving	1	52	16	534
*Bread pudding	Average serving	7	13	23	243
cream	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Kaffee Hag					
cream	1½ tablespoonfuls	0.7	4.5	0.7	46
sugar	2 teaspoonfuls	..	..	10	40
Evening					
Ice cream	Average serving	3	19	17	246
Hot chocolate	6 ounces	7	11	26	229
		114	286	326	4322

CARAMEL CUSTARD (2 servings)

Materials:

1 tablespoonful sugar
1 cup scalded milk
1 egg
½ teaspoonful vanilla
⅛ teaspoonful salt

Method:

1. Place sugar in a deep saucepan
2. Stir until melted and slightly brown
3. Pour melted sugar into hot milk
4. Beat egg slightly
5. Add vanilla and salt to egg
6. Pour hot milk over egg, stirring constantly
7. Strain into custard cups
8. Set cups in a pan of hot water, having the water come as high on the outside of the cups as the custard mixture does on the inside
9. Bake in a slow oven until firm

Total recipe: protein, 14 Gm.; fat, 16 Gm.; carbohydrate, 27 Gm.; calories, 308.

One serving: protein, 7 Gm.; fat, 8 Gm.; carbohydrate, 14 Gm.; calories, 154.

HOT WATER SPONGE CAKE (6 servings)

Materials:

Yolks of 2 eggs
¾ cup sugar
⅜ cup hot water
¼ teaspoonful lemon extract
1 cup flour
1½ teaspoonfuls baking powder
¼ teaspoonful salt
Whites of two eggs

Method:

1. Beat egg yolks until thick and lemon colored
2. Add one half the amount of sugar gradually, and continue beating until well blended
3. Add hot water, remaining sugar, and lemon extract
4. Add flour sifted with baking powder and salt
5. Beat egg whites until stiff
6. Fold in egg whites
7. Pour in a shallow pan which has been greased and floured
8. Bake twenty-five minutes in a moderate oven

Total recipe: protein, 27 Gm.; fat, 13 Gm.; carbohydrate, 268 Gm.; calories, 1,297.

One serving: protein, 5 Gm.; fat, 2 Gm.; carbohydrate, 45 Gm.; calories, 216.

TABLE 7.—*Menu Employing "High Caloric" Diet*

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Red raspberries	½ cup	..	..	9	36
cream	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Wheatena	½ cup	4	..	15	78
cream	4 tablespoonfuls	1.6	12	2.5	124
sugar	2 teaspoonfuls	..	..	10	40
Crisp bacon	3 strips 5 inches long	5	11	..	113
Toast	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
Chocolate	6 ounces	7	11	26	229
Midmorning					
Eggnog	6 ounces	10	11	11	183
Graham crackers	2	2	2	12	74
Lunch					
Cream of mushroom soup	Average serving	7	16	7	205
soda crackers	2	2	2	10	66
Entire wheat bread	1 slice	2	..	14	64
butter	1 tablespoonful	..	13	..	117
Applesauce	Average serving	..	1	25	107
Milk	6 ounces	6	7.5	9	128
Midafternoon					
Rice pudding	Average serving	8	7	33	221
Milk	6 ounces	6	7.5	9	128
Dinner					
Lamb chop	3 ounces	16	21	..	250
Mashed potato	Average serving	2	4	18	118
butter	1 tablespoonful	..	13	..	117
Lima beans	Average serving	8	5	30	192
Puréed spinach	½ cup	2	9	3	101
Entire wheat bread	1 slice	2	..	14	64
butter	1 tablespoonful	..	13	..	117
Fruit salad no. 1	Average serving	2	15	16	200
Graham whip	Average serving	7	12	36	277
cream	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Kaffee Hag					
cream	1½ tablespoonfuls	0.7	4.5	0.7	46
sugar	2 teaspoonfuls	..	..	10	40
Evening					
Ice cream	Average serving	3	19	17	246
		108	249	366	4033

CREAMED ASPARAGUS

Materials:

6 stalks of asparagus
1 slice of buttered toast
½ cup white sauce No. 2
½ teaspoonful salt

Method:

1. Cut off lower end of stalks
2. Wash
3. Cook in boiling salted water until tender
4. Drain
5. Place buttered toast on a small plate
6. Arrange on toast, the tips at one end
7. Pour white sauce over all
8. Serve very hot

Total recipe: protein, 9 Gm.; fat, 40 Gm.; carbohydrate, 41 Gm.; calories, 580.

CORNSTARCH PUDDING (2 servings)

Materials:

- 2 tablespoonfuls cornstarch
- 3 tablespoonfuls sugar
- Few grains of salt
- 2 tablespoonfuls cold milk
- 1 cup scalded milk
- 1 egg
- ½ teaspoonful vanilla

Method:

1. Combine cornstarch, sugar and salt
2. Mix to a smooth paste with cold milk
3. Add slowly to scalded milk, stirring constantly
4. Cook over water forty-five minutes, stirring constantly
5. Beat egg until smooth
6. Pour mixture slowly on egg
7. Add vanilla
8. Strain through coarse sieve into mold
9. Serve very cold

Total recipe: protein, 14 Gm.; fat, 16 Gm.; carbohydrate, 73 Gm.; calories, 497.

One serving: protein, 7 Gm.; fat, 8 Gm.; carbohydrate, 39 Gm.; calories, 248.

TABLE 8.—*Menu Based on "High Caloric" Diet*

	Amount	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast					
Baked apple	1	..	1	27	117
cream (coffee)	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Cornmeal	½ cup	1	..	16	70
cream (coffee)	4 tablespoonfuls	1.6	12	2.5	124
sugar	2 teaspoonfuls	..	..	10	40
Poached egg	1	6	6	..	78
butter	1 tablespoonful	..	13	..	117
toast	½ slice	2	..	8	38
Toast	1 slice	3	..	16	76
butter	1 tablespoonful	..	13	..	117
Cocoa	6 ounces	6	7	19	160
Midmorning					
Fruit gelatin	4 ounces	2	..	18	80
cream	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Graham crackers	2	2	2	12	74
Lunch					
Cream of potato soup	Average serving	10	14	39	322
soda crackers	2	2	2	10	66
Crisp bacon	3 strips 5 inches long	5	11	..	113
Entire wheat bread	1 slice	2	..	14	64
butter	1 tablespoonful	..	13	..	117
Fruit gelatin	4 ounces	2	..	18	80
cream	2 tablespoonfuls	0.8	6	1.2	62
sugar	1 teaspoonful	..	..	5	20
Milk	6 ounces	6	7.5	9	128
Midafternoon					
Eggnog	6 ounces	10	11	11	183
Soda crackers	2	2	2	10	66
butter	1 tablespoonful	..	13	..	117
Dinner					
Baked fish	Average serving	12	10	..	138
Stuffed baked potato	1	5	2	28	150
butter	1 tablespoonful	..	13	..	117
Stringbeans	½ cup	1	4	3	52
Celery	4 pieces 5 inches long	..	..	2	8
Entire wheat bread	1 slice	2	..	14	64
butter	1 tablespoonful	..	13	..	117
Waldorf salad (no nuts)	Average serving	2	52	7	502
Ice cream	Average serving	3	19	17	246
Kaffee Hag					
cream	1½ tablespoonfuls	0.7	4.5	0.7	46
sugar	2 teaspoonfuls	..	..	10	40
Evening					
Stewed apricots	3 halves	1	..	11	50
Crackers	2	2	2	10	66
butter	1 tablespoonful	..	13	..	117
		94	278	361	4306

DANDELION GREENS

Materials:

- 1 quart dandelion greens
- 1 tablespoonful butter
- Salt to taste

Method:

1. Wash greens carefully
2. Put in a kettle
3. Cook in a covered pan over a slow fire until tender
4. When tender remove lid and allow greens to become almost dry
5. Add butter
6. Season

Average serving: protein, 1 Gm.; fat, 7 Gm.; carbohydrate, 2 Gm.; calories, 71.

ESCALLOPED RICE AND APPLES (2 servings)

Materials:

- 1 apple (large)
- 1 tablespoonful butter
- ½ cup cooked rice
- 3 tablespoonfuls brown sugar
- 2 tablespoonfuls bread crumbs

Method:

1. Pare, core and slice apple
2. Melt butter, add one half to rice and mix well
3. Arrange apples, brown sugar and buttered rice in layers, on buttered baking dish
4. Melt remaining butter and add to bread crumbs
5. Place buttered bread crumbs over top of rice and apples
6. Bake in a moderate oven, until apples are tender

Total recipe: protein, 3 Gm.; fat, 13 Gm.; carbohydrate, 93 Gm.; calories, 501.

One serving: protein, 2 Gm.; fat, 6 Gm.; carbohydrate, 47 Gm.; calories, 250.

JELLIED APPLES (6 servings)

Materials:

- 1 tablespoonful gelatin
- ¼ cup cold water
- 3 apples
- ½ cup sugar
- 1 cup boiling water
- ½ teaspoonful vanilla

Method:

1. Soak gelatin in cold water
2. Peel and core apples
3. Place apples in a sauce pan with boiling water and sugar
4. Cover and cook until tender
5. Drain apples and arrange in a mold
6. Add enough water to the syrup in which apples were cooked to make 1½ cups, and heat to boiling point
7. Dissolve gelatin in the hot syrup
8. Add vanilla
9. When just beginning to set, beat well with egg beater and pour over apples
10. Allow to stand in cool place until firm

Total recipe: protein, 9 Gm.; fat, 3 Gm.; carbohydrate, 174 Gm.; calories, 747.

One serving: protein, 2 Gm.; fat, —; carbohydrate, 29 Gm.; calories, 124.

EGGS À LA GOLDENROD (4 servings)

Materials:

- 4 hard cooked eggs
- 1⅓ cups white sauce No. 2
- 4 slices toast
- 1⅓ tablespoonfuls butter
- Small amount parsley

Method:

1. Separate egg yolk from white
2. Chop white finely and add to white sauce
3. Heat thoroughly
4. Butter toast
5. Pour white mixture on toast
6. Force yolk through strainer onto white mixture
7. Garnish with parsley

Total recipe: protein, 49 Gm.; fat, 89 Gm.; carbohydrate, 95 Gm.; calories, 1,377.

One serving: protein, 12 Gm.; fat, 22 Gm.; carbohydrate, 24 Gm.; calories, 344.

BREAD PUDDING (4 servings)

Materials:

- 1 cup stale bread crumbs
- 2 cups scalded milk
- 1 egg
- 3 tablespoonfuls sugar
- 2 tablespoonfuls melted butter
- ¼ teaspoonful salt
- ¼ teaspoonful vanilla

Method:

1. Pour scalded milk on crumbs
2. Allow to cool
3. Beat egg slightly
4. Add sugar, salt and vanilla
5. Add to crumbs
6. Turn into buttered baking dish
7. Bake one hour in a slow oven

Total recipe: protein, 26 Gm.; fat, 52 Gm.; carbohydrate, 90 Gm.; calories, 972.

One serving: protein, 7 Gm.; fat, 13 Gm.; carbohydrate, 23 Gm.; calories, 243.

ASPARAGUS LOAF (3 servings)

Materials:

1 tablespoonful butter
1 tablespoonful flour
½ cup scalded milk
⅛ teaspoonful salt
2 eggs
1 tablespoonful chopped chicken
½ cup puréed asparagus

Method:

1. Melt butter
2. Add flour and stir until creamy
3. Add milk gradually, stirring constantly
4. When mixture thickens, add salt, well beaten egg, chicken and asparagus
5. Pour into a buttered baking dish and bake in a moderate oven until firm

Total recipe: protein, 22 Gm.; fat, 33 Gm.; carbohydrate, 15 Gm.; calories, 445.

One serving: protein, 7 Gm.; fat, 11 Gm.; carbohydrate, 5 Gm.; calories, 148.

BUTTERED ASPARAGUS

Materials:

8 stalks of asparagus
¼ teaspoonful salt
1 teaspoonful melted butter

Method:

1. Cut off lower end of stalk
2. Wash
3. Cook in boiling salted water until tender
4. Drain
5. Arrange in small vegetable dish, the tips all at one end
6. Pour melted butter over
7. Place vegetable dish on small plate
8. Serve very hot

Total recipe: protein, 1 Gm.; fat, 4 Gm.; carbohydrate, 2 Gm.; calories, 48.

STUFFED BAKED POTATOES (3 servings)

Materials:

3 medium potatoes
1 egg
Salt and pepper

Method:

1. Select smooth medium sized potatoes
2. Scrub with brush
3. Place on rack in hot oven
4. Bake until soft
5. Remove from oven
6. Cut slice from side of potato
7. Scoop out inside
8. Wash and add egg, well beaten
9. Season with salt and pepper
10. Refill skins
11. Bake from five to eight minutes in a very hot oven

Total recipe: protein, 15 Gm.; fat, 6 Gm.; carbohydrate, 84 Gm.; calories, 450.

One serving: protein, 5 Gm.; fat, 2 Gm.; carbohydrate, 28 Gm.; calories, 150.

WHIPPED CREAM DRESSING

Materials:

1 egg yolk
½ teaspoonful mustard
½ teaspoonful salt
Paprika
1 tablespoonful melted butter
4 tablespoonfuls cream
1 tablespoonful vinegar
1 cup whipped cream

Method:

1. Beat egg yolk
2. Add mustard, salt and paprika
3. Add melted butter and cream
4. Cook in double boiler, stirring constantly
5. When mixture begins to thicken, add vinegar very slowly, continuing to stir until it has thickened
6. Cool
7. Fold in whipped cream

Total recipe: protein, 8 Gm.; fat, 76 Gm.; carbohydrate, 6 Gm.; calories, 728.

Three tablespoonfuls: protein, 1 Gm.; fat, 10 Gm.; carbohydrate, 1 Gm.; calories, 92.

BUTTERED PEAS (2 servings)

Materials:

1 cup shelled peas
1 tablespoonful butter
¼ teaspoonful salt
1 cup boiling water

Method:

1. Cover peas with cold water
2. Skim off undeveloped peas which rise to top
3. Drain remaining peas
4. Cook until tender in boiling salted water
5. Drain
6. Add butter
7. Serve very hot in vegetable dish

Total recipe: protein, 7 Gm.; fat, 13 Gm.; carbohydrate, 20 Gm.; calories, 224.

One serving: protein, 4 Gm.; fat, 7 Gm.; carbohydrate, 10 Gm., calories, 112.

LETTUCE SALAD (2 servings)

Materials:

1 small head lettuce
½ cup mayonnaise dressing

Method:

1. Clean lettuce by removing outside leaves
2. Cut in quarters
3. Allow two quarters for one serving
4. Arrange on salad plates
5. Pour dressing over lettuce

Total recipe: protein, 2 Gm.; fat, 104 Gm.; carbohydrate, 5 Gm.; calories, 963.

One serving: protein, 1 Gm.; fat, 52 Gm.; carbohydrate, 3 Gm.; calories, 481.

PRACTICAL APPLICATIONS OF HIGH CALORIC DIET

Mr. and Mrs. Ricardo came to this country about four years ago; they went to ————, where they had friends, and remained there some time. Mr. Ricardo became ill with diabetes and was unable to work. For a time Mrs. Ricardo was not able to work away from home. They had heard that there was plenty of work for women in Cleveland, so they came with their two small children, leaving a baby 3 weeks old behind with their friends. Before long, Mr. Ricardo went to a physician, who referred him to the dispensary, where he was entered in the diabetic clinic. He came regularly and was taught to plan his diet so as to keep sugar free and to combat the ill effects of early faulty food habits. He still was too weak to work but he stayed at home and looked after the two children. The parents hoped to be able to send for the baby whom they had left behind. Mrs. Ricardo went out cleaning every day and by dint of careful use of money and with the help of the dietitian, who suggested wise purchases of food, they steadily saved "to bring the baby home."

But Mrs. Ricardo still did not understand all she should about the need for proper food and like many other ill advised persons she dashed off to work with only bread and coffee for breakfast. Her dinner was whatever she was given where she worked and her suppers were really the only regular meal she had. Very soon, she too was too ill to go to work and she went to a physician, who referred her to the gastric clinic. Care and supervision of her diet brought her back to the point where she could again work. She has been back at work several months. Mr. Ricardo is well enough to take care of the children and do the home making. They have saved money and the week before Christmas they sent for the "baby," now 2 years old.

Mrs. Radowski had never cooked in her life. As a girl on her father's estate in north Poland there had

been no need to acquire this knowledge, for there had always been plenty of servants. She had learned to sew in the school which she had attended, but to cook, never. When she had gone as a bride to Warsaw, still there was no need. Then the war came, bringing great nervous strain and privation followed by the postwar period of unrest and change. Mr. and Mrs. Radowski turned their faces to the new world and it was a new world to them. Mrs. Radowski had no conception of the value of money and it is difficult for those most trained in economy to stretch $35 a week (her husband's salary as a bookkeeper) to cover the needs of two people. She could speak German, French, English and her native Polish, but it never occurred to her to try to read a cook book. She made no efforts to prepare foods and she and her husband ate at restaurants. She supplemented her husband's salary by dressmaking for a few people who would come to the poor district where she lived.

One day she came to the dispensary complaining of "stomach trouble." The physician prescribed a smooth, bland diet, chiefly cream soups, cereals, eggs and custards. When the dietitian asked Mrs. Radowski if she could make cream soup she laughed and said, "Never, never in my life have I cooked, but I try, I try hard. Madam, is it permitted that I have strawberries?" The dietitian suggested baked apples as her fruit and demonstrated toast and cream soup to her and the next morning went out to call on her. Mrs. Radowski greeted her enthusiastically, "Oh Madam, I sleep last night. The medicine the good Herr Doktor gave me makes me feel better and last night I make cream soup and toast—toast bread this morning. I drink milk and ate more toast bread and now I just bake an apple! See, Madam," and she led the way to the immaculate kitchen and to the apple. Core, seeds and stem had been left in, a little sugar had been sprinkled over the top and the sugar with the juice, in the absence of water, had charred black. It did not look very appetizing but Mrs. Radowski was proud of it. The dietitian smiled and told her it was just right for applesnow and Mrs. Radowski learned how to make applesnow and custard sauce.

Mrs. Wagner, another patient, came in feeling very bad. She weighed 98 pounds (44.5 Kg.). She was sure that she had tuberculosis, the one disease laymen dread above all others. She had a marked ptosis and so was placed on a high caloric, anticonstipating, gastroptosis diet. The physician was very anxious to have her get 4,000 calories a day. She took cream and S. M. A., but for the first few weeks she could not take more than 1,200 calories a day. She kept a record of the foods and amounts eaten each day. With constant encouraging, suggesting and cajoling, her caloric intake gradually increased. At the end of five months she had gained 20 pounds (9 Kg.). At the end of a year she weighed 30 pounds (13.6 Kg.) more than when she came in. She is now able to work again, so she and her husband will presently have saved enough money to bring the children from Europe. She can hardly believe that only one year ago she wanted to go back to Austria to die.

Another patient referred for dietetic instruction was a boy, aged 18, who was suffering from a gastroptosis. He stated that he had been on a restricted diet before, with poor results, and that his mother was too busy to bother with special foods for him. The following day the dietitian visited Charles in his home and found that the mother was sick in bed, leaving Charles temporary cook for the family. At his request, the dietitian accompanied him to the neighboring market and offered a few suggestions as to his purchases. At this time he described the usual family dietary at home, and told how his youngest sister breakfasted on coffee and cake before running off to school. Incidentally, she was 15 pounds (6.8 Kg.) underweight. Many visits were made to this home, during which time Charles not only became interested in his own diet but an enthusiastic worker for the cause of his sister. At the end of the two months, Charles proudly announced that she had gained 10 pounds (4.5 Kg.). Concerning his own diet, he said "I used to think it was awful hard to be on a diet, but when you have somebody to explain everything and help you with it, it's nothing at all."

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

SYNEPHRIN.—Hydroxyphenylmethylaminoethanol Hydrochloride. — Parahydroxyphenylmethylaminoethanol Hydrochloride. — Racemic-α-4-hydroxyphenyl-β-methylamino ethanol hydrochloride. — Racemic-α-hydroxy-β-methylamino-4-hydroxy ethyl benzene hydrochloride.—$HOC_6H_4CHOHCH_2NHCH_3HCl$. —The hydrochloride of an alkaloid obtained synthetically.

Actions and Uses.—Synephrin is used as a vasoconstrictor. It is less toxic than either epinephrine or ephedrine, and its vasoconstrictor action, while not so pronounced as that of epinephrine, endures for a longer time. In combination with procaine hydrochloride, it is useful for local anesthesia in dental operations and in minor surgery in cases in which a bloodless area is not required. Clinical experience indicates that it is about one-fiftieth to one-hundredth as active as epinephrine. Its reaction on smooth muscle causes relaxation of the intestines and of the bronchial tubes, dilates the pupil, and increases the muscular tone of the uterus. Injected into rabbits, it produces a hyperglycemia from one to two hours after the injection; also a slight glycosuria. Applied to mucous membranes, it causes contraction of the capillaries, thus reducing swelling and congestion of such membranes. For the same reason it is used for shrinking swollen turbinates. When used in the nose it is stated not to have a tendency to cause local irritation or sneezing. Injection of a solution of synephrin, 1 per cent, with procaine hydrochloride, 2 per cent, induces local anesthesia of about thirty to forty minutes' duration. In hay-fever and asthma, synephrin administered orally or hypodermically has given relief in mild attacks and has relieved the coughing spasms of asthma and of pertussis.

Dosage.—From 0.1 to 0.2 Gm. (1½ to 3 grains) three times daily. It is administered orally, hypodermically, or by application to the mucous membranes of the nose or the eye.

Manufactured by Frederick Stearns & Company, Detroit. U. S. patent 1,680,055 (Aug. 7, 1928; expires 1945). U. S. trademark 90,142.

Synephrin Solution "A": One hundred cubic centimeters contains synephrin, 5 Gm.; chlorbutanol, 0.05 Gm., in distilled water.

Ampoules Synephrin-Procaine, 3 cc.: Each ampule contains synephrin, 0.0075 Gm.; procaine hydrochloride, 0.06 Gm.; sodium chloride, 0.021 Gm.; potassium sulphate, 0.012 Gm., in 3 cc. of solution.

Hypodermic Tablets Synephrin-Procaine: Each tablet contains synephrin, 0.0025 Gm.; procaine hydrochloride, 0.02 Gm.; sodium chloride, 0.007 Gm.; potassium sulphate, 0.004 Gm.

Synephrin occurs as fine, odorless, white crystals. It is readily soluble in water and cold alcohol. The aqueous solution is neutral to litmus. It is optically inactive. It melts between 149 and 151 C. with decomposition. (The rate of heating must be strictly according to the method of U. S. P. X.)

Dissolve 0.005 Gm. of synephrin in 1 cc. of water and add 0.1 cc. of copper sulphate solution followed by 1 cc. of sodium hydroxide solution (20 per cent): a blue-violet color forms at once; the color is not extracted by ether. To 1 cc. of an aqueous solution containing 0.005 Gm. of synephrin add one drop of mercurous nitrate solution and boil: a blood red color develops (*distinction from ephedrine and phenylamino ethanol*). To 1 cc. of an aqueous solution containing 0.005 Gm. of synephrin add one drop of ferric chloride solution (10 per cent): an amethyst-purple color develops (*distinction from phenylaminoethanol, ephedrine and epinephrine*). To 1 cc. of an aqueous solution containing 0.005 Gm. of synephrin, contained in a Nessler tube, add 2 cc. of phosphotungstic acid reagent (*J. Biol. Chem.* **13**: 477, 1912), followed by 10 cc. of sodium carbonate solution (saturated) and dilute to the 50 cc. mark: a faint suggestion of blue color is apparent when viewed longitudinally. At the same time and in the same manner treat 0.1 cc. of 1:1,000 (0.0001 Gm.) epinephrine hydrochloride: a decided blue color forms (*distinction from epinephrine*). To 3 cc. of an aqueous solution containing 0.015 Gm. of synephrin add 1 cc. of alcoholic potassium hydroxide solution followed by 3 drops of chloroform and boil: no odor of carbylamine is observed (*absence of primary amines*). To 0.10 Gm. of synephrin dissolved in 1.0 cc. of water, add 3 to 5 drops of ammonia water: on rubbing the walls of the container with a glass rod, the free base separates. Filter by suction, wash well with water and dry on a porous plate: the dried base melts with decomposition at 184-185 C. The temperature of the bath must be raised at the rate of from 5 to 6 degrees per minute. To 1 cc. of a solution containing 0.005 Gm. of synephrin, add 0.1 cc. of diluted nitric acid followed by 0.1 cc. of silver nitrate solution: a white precipitate appears; on boiling, an orange color appears in the liquid.

Dissolve 0.05 Gm. of synephrin in from 30 to 40 cc. of distilled water, add 1 cc. of diluted hydrochloric acid and 1 cc. of barium chloride solution: no turbidity should result (*absence of sulphate*). Dissolve 0.2 Gm. of synephrin in 10 cc. of distilled water: the solution yields a negative test for heavy metals when tested according to the U. S. P. X method (see U. S. P. X, page 439). To 1 cc. of a solution containing 0.02 Gm. of synephrin add 5 drops of a freshly prepared solution of sodium nitroprusside (1 per cent), then 1 cc. of sodium hydroxide solution followed by 10 drops of glacial acetic acid: the final solution is colorless (*absence of corresponding ketone*).

Dissolve about 0.3 Gm. of synephrin, accurately weighed, in 200 cc. of water; heat to boiling and add 10 cc. of diluted nitric acid followed by sufficient silver nitrate to precipitate all the chloride; allow to stand for six hours; transfer to a tared Gooch crucible; wash well with hot water; then with cold water and dry at 120 C., cool in a desiccator and weigh: the chloride (Cl^-) calculated from the silver chloride weighed is not less than 17.30 nor more than 17.60 per cent. Transfer about 0.35 Gm. of synephrin, accurately weighed, to a 500 cc. Kjeldahl flask and determine the nitrogen content according to the method described in Medical War Manual No. 6, Laboratory Methods of the U. S. Army, page 221: the percentage of nitrogen corresponds to not less than 6.7 per cent nor more than 7.0 per cent. Incinerate 0.1 Gm. of synephrin, accurately weighed: the ash is not more than 0.0001 Gm.

MEAD'S DEXTRI-MALTOSE WITH VITAMIN B.

—A mixture containing approximately: maltose, 52.58 per cent; dextrins, 39.80 per cent; protein, 4.34 per cent; mineral salts, 2.28 per cent (including natural iron salts, 0.0119 per cent); and moisture 1.00 per cent. It is standardized physiologically to contain in each 2.5 Gm. the vitamin B_1 and B_2 equivalent of approximately 1 Gm. of dried yeast or 2 Gm. of wheat embryo.

Actions and Uses.—Mead's dextri-maltose with vitamin B is proposed for use in the diet of infants suffering from vitamin B deficiency. Its use as a carbohydrate in the general feeding of infants is proposed not only to supplement the carbohydrate deficiency of cow's milk but also to insure an adequate supply of vitamin B, especially the antineuritic factor, in the diet. The nutritive value of 500 Gm. corresponds approximately to 1,950 calories.

Dosage.—Mead's dextri-maltose with vitamin B may be used in sufficient amounts to meet the carbohydrate requirements of infants in place of other carbohydrates.

Manufactured by Mead Johnson & Co., Evansville, Ind. No U. S. patent. U. S. trademark 154,589.

The dextri-maltose contained in Mead's dextri-maltose with vitamin B is prepared by the action of diastase and barley malt starch. To the dextri-maltose is added extractives of wheat embryo and yeast, the extractives being removed under conditions designed to obtain maximum extraction of the vitamin B factors and mineral salts.

Mead's dextri-maltose with vitamin B is a pale yellowish-white, granular, odorless powder, having a malty taste. It is somewhat deliquescent on exposure to the air. It is soluble in water or milk. The maltose of Meade's dextri-maltose with vitamin B is determined by the Fehling volumetric method as described in Leach's "Food Inspection and Analysis," ed. 4, p. 615. The dextrin is determined by the method described in Leach's "Food Inspection and Analysis," ed. 4, p. 654. The estimation of protein is made by the method described in "Methods of Analysis, A. O. A. C.," 1925, p. 8, chapter 1, par. 22. The estimation of moisture is made by drying to constant weight in vacuum oven at 75 C. Percentage loss in weight is reported as moisture. The estimation of mineral salts is described in "Methods of Analysis, A. O. A. C.," 1925, p. 179, chapter 13, par. 8. The estimation of natural iron salts reported as ferric oxide is described in the *Journal of Biological Chemistry* **67**: 43. The content of the vitamin B complex is determined by ascertaining the average daily gain in weight of a rat when fed on a diet complete except for the vitamin B factors and to supplement this diet daily with weighed portions of the material containing vitamin B to be tested.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

W. A. PUCKNER, Secretary.

METATONE NOT ACCEPTABLE FOR N. N. R.

Shotgun tonic mixtures were very popular a generation ago and some received more or less official recognition by being included in the national Pharmacopeia. In recent years these tonic mixtures have deservedly fallen into disuse, although included in the line of preparations of many pharmaceutic manufacturers. Occasionally an effort is made to revive the use of such tonics by the addition of an ingredient the use of which has become a current fad. One of the recent attempts in this direction is the exploitation by Parke, Davis & Co. of a typical shotgun tonic mixture, modernized by the addition of "vitamin B extract." This preparation, known as Metatone, is stated to have the following composition:

Alcohol, 16 per cent

	Per Fluidounce
Vitamin B extract	10 grs.
Nucleic acid	2 grs.
Calcium glycerophosphate	4 grs.
Potassium glycerophosphate	4 grs.
Sodium glycerophosphate	2 grs.
Manganese glycerophosphate	½ gr.
Strychnine glycerophosphate	8/200 gr.

The dose is given as 1 to 2 teaspoonfuls, as directed by the physician.

Metatone is claimed to be a palatable nutrient tonic, hematinic and stimulant of appetite and digestion. Because of its vitamin B content, it is claimed that it materially assists in the utilization of food, promotes growth, is hematogenic, stimulates the activity of the endocrine glands, and tends to increase the resisting powers of the patient toward the inroads of disease, and that it is a valuable therapeutic agent in cases of faulty nutrition, underdevelopment and the obscure nervous manifestations which are so commonly found in patients who are "run down" and in a state of metabolic imbalance. The nucleic acid in the mixture is stated to favor phagocytosis and to be of service in cases of anemia and neurasthenia associated with a low grade of infection. It is stated that the calcium glycerophosphate, by virtue of its contained calcium, tends to quiet nervous excitement and that there is considerable clinical evidence of its value in neurasthenia, in disturbances of calcium metabolism with spastic manifestations. The sodium and potassium glycerophosphates are stated to be the logical remedies in cases in which a stimulant action on the metabolism of the central nervous system is desired, as in neuralgia, senility, Graves' disease, etc. The strychnine is claimed to strengthen the flagging nervous system without leading to complete dependence on it. It is stated that the vitamin content enhances the alterative effects of the glycerophosphates and cooperates effectively with the nuclein in cleaning out and building up the debilitated body.

Metatone is recommended for patients convalescent from acute illness, and the eruptive fevers of children, in neurasthenia, anemia, chlorosis, rickets, after surgical operations and in general to assist digestion and the hematopoietic function.

The statement as to the amount of "vitamin B extract" is meaningless and gives no indication as to the actual amount of vitamin B present. Vitamin B is a constituent of many common foods and it is only in special conditions that an extra amount is indicated. There appears to be no good reason for giving it along with the other constituents of Metatone. There are other richer and cheaper sources of vitamin B.

Most of the other constituents of Metatone have long since been discredited as useful therapeutic agents. Nucleic acid was introduced into medicine a number of years ago with the idea that its administration by mouth would increase the number of white blood cells. Evidence on which this claim was based was neither clear nor convincing. In 1921 the Council on Pharmacy and Chemistry omitted all nucleic acid preparations from New and Nonofficial Remedies because of the lack of sufficient evidence as to their value. The manufacturer of

Metatone claims that the nucleic acid present in the preparation "stimulates phagocytosis" and "increases the bactericidal power of the blood." There is no known scientific basis for the truth of this claim. Certainly the amount of nucleic acid in a dose of Metatone (from ¼ to ½ grain) could be expected to have no more effect on phagocytosis or bactericidal properties of the blood than would the eating of a few mouthfuls of liver or sweetbreads with the contained nuclein.

It is stated that "six of the seven ingredients of Metatone contain *phosphorus* in acceptable and available form." The "acceptable and available" phosphorus in Metatone consists of a mixture of glycerophosphates of calcium, sodium, potassium, manganese and strychnine. The evidence for and against the therapeutic value of glycerophosphates was considered as long ago as 1915 (Marshall, E. K.: "The Therapeutic Value of Organic Phosphorus Compounds," THE JOURNAL, Feb. 13, 1915, p. 573) and the conclusion was reached that the evidence is very convincing of the view that the animal organism can synthesize its complex organic phosphorus constituents from inorganic phosphates and that organic phosphorus is of no more value as a food than inorganic. Ordinary diets provide an excess of phosphates which are excreted and there is no advantage to be derived from the addition of any form of combined phosphorus to the diet. In 1917 in a report on Eskay's Neurophosphates (Smith, Kline and French) the Council on Pharmacy and Chemistry pointed out the fallacy of a glycerophosphate nostrum having almost the identical composition of Metatone.

The small amounts of calcium, potassium, sodium and manganese can be expected to serve no useful purpose.

The amount of strychnine alkaloid is approximately 1/285 grain per fluidrachm, an amount too small to produce a therapeutic effect or to do any harm.

The Council declared Metatone unacceptable for New and Nonofficial Remedies because it is an unscientific mixture marketed under a proprietary name with unwarranted therapeutic claims.

COLLOSOL KAOLIN NOT ACCEPTABLE FOR N. N. R.

Collosol Kaolin is the name given by the Crookes Laboratories, Inc., to a product stated to be "a prepared clay, giving a comminuted chemically inert material of high adsorptive capacity," the manufacturing process of which is so "regulated that there is finally obtained from the sedimentation and washing of the china clay a colloidal suspension entirely free from gritty material. The final product is separated from the suspension by transferring to a filter press and using a press cloth of extremely fine texture."

An advertising circular submitted by the firm recommends the use of the product in various conditions, including rheumatism, neuritis and asthma. The statement concerning the use of the product in these three conditions reads: "Rheumatism, neuritis, asthma and many other toxaemic troubles of stasis have been found to clear up in the most gratifying way under colloidal kaolin therapy* [the asterisk refers to unspecified clinical references later in the circular] and Dr. W. H. Wynn recommends Collosol Kaolin in the treatment of *chronic arthritis* or *rheumatoid arthritis*, in which he says the 'chronic abdominal' type of patient is well represented, and stasis with abnormal growth of intestinal streptococci a common feature." The implication that these statements prove the usefulness of kaolin in these conditions is not proved and is probably mistaken. Moreover, the continued use of kaolin tends to form hard concretions, which have even produced fatal perforating ulcerations, so that the Germans, who had employed it against dysentery during the war, abandoned its use and substituted charcoal. The circular is misleading in that it does not mention these objections, and the claims of value in rheumatism, neuritis and asthma are unwarranted.

The Council declared Collosol Kaolin unacceptable for New and Nonofficial Remedies because of the unwarranted therapeutic claims and because of possible dangers from the therapeutic use of the product.

RECRESAL NOT ACCEPTABLE FOR N. N. R.

Recresal is the product of Chemische Werke vorm. H. & E. Albert, Wiesbaden-Biebrich, Germany. According to the information submitted to the Council by this firm, Recresal is sodium phosphate monobasic, having the formula $NaH_2PO_4 \cdot 2H_2O$. It is therefore nothing more than the well known acid sodium phosphate, which is official in the U. S. Pharmacopeia as sodium biphosphate, marketed under a proprietary, noninforming name.

Sodium biphosphate is used in medicine as a convenient form for the administration of an acid, as for instance in the administration of methenamine when it is desired to render the urine acid. It is also administered as a saline laxative, being considered by some to be superior to the widely used neutral sodium phosphate (sodium phosphate, U. S. P.) because of its more pleasant taste. Recresal, however, is not proposed for conditions in which sodium biphosphate is used. Instead the German firm, in the information sent to the Council, claims that according to clinical reports Recresal is ". . . indicated in all *Nervous affections:* Neurasthenia, neuroses, physical and mental overexertion in work or sports. *Metabolic disturbances:* Anemia, chlorosis, diabetes mellitus and insipidus, troubles of the menopause, Basedow's disease, necroses, rachitis, osteopathic states, otosclerosis, arteriosclerosis, vomiting of pregnancy, molimina of lactation, obesity. *For increasing vigor:* In tuberculosis, scrofulosis (in association with climatic treatment and heliotherapy) constitutional weakness during developmental and scholastic periods, feebleness in advanced age, cachexia, myasthenia, acute infectious febrile affections, convalescence following operations or sickness and particularly in the diminished vigor accompanying chronic dysentery."

A circular, which according to the German firm is intended for the public, contains the following recommendations for the use of Recresal: "Especially indicated for conditions of senility and in Anemia, Pallor, Affections of the Blood, Nervousness, Mental Weakness and in all forms of Mental and Bodily Exhaustion." "Recresal is therefore indispensable alike for aiding occupations and sports."

Various compounds of phosphorus have from time to time been put forward as having outstanding therapeutic effectiveness as "nerve foods" because of their asserted ready assimilation. Thus the hypophosphites and glycerophosphates had their vogue and formed the basis of extended proprietary exploitation until they were shown not to be absorbed or no more readily absorbed than the phosphate component of our daily food (The Hypophosphite Fallacy, Report of the Council on Pharmacy and Chemistry, THE JOURNAL, Sept. 2, 1916, p. 760; The Therapeutic Value of the Glycerophosphates, Report of the Council on Pharmacy and Chemistry, ibid., Sept. 30, 1916, p. 1033). Similarly a solution of calcium acid phosphate, "Horsford's Acid Phosphate," had considerable popularity (thanks to advertising in the form of physicians' prescriptions) some forty years ago. During the World War, reports came from Germany that the administration of sodium acid phosphate had produced astounding effects on the German troops in the promotion of muscular activity and the prevention of fatigue.

Some of the reports emanated from physiologists of repute and other circumstances lent sufficient credence to these reports so that an investigation of the subject was made in this country by the United States Public Health Service (Flinn, F. B.: The So-Called Action of Acid Sodium Phosphate in Delaying the Onset of Fatigue, *Public Health Reports*, July 16, 1926, p. 1463). The study showed that the administration of acid sodium phosphate does not increase muscular efficiency and that the feeling of well being which followed was to be ascribed to the laxative action of the substance.

The Council finds "Recresal" unacceptable for New and Nonofficial Remedies because the exploitation of a well known drug under a proprietary, noninforming name is not in the interest of rational therapy; because the therapeutic claims advanced for it are unwarranted; and because the claims advanced for the preparation will lead to its indiscriminate and ill advised use by the public.

COMMITTEE ON FOODS

THE FOLLOWING RULES HAVE BEEN ADOPTED FOR THE WORK OF THE COMMITTEE ON FOODS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THESE RULES WILL AFFECT ALL ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

E. M. BAILEY.
EUGENE F. DU BOIS.
JULIUS H. HESS.
W. MCKIM MARRIOTT.
LAFAYETTE B. MENDEL.
GROVER F. POWERS.
H. C. SHERMAN.
MORRIS FISHBEIN, Chairman.

FORM OF SUBMISSION

Any product which it is desired to have considered for "Accepted Foods" should be presented to the Committee on Foods, American Medical Association, 535 North Dearborn Street, Chicago, and except in special instances should be accompanied by twelve trade packages, twelve sets of descriptive advertising, circulars, etc., and a description of the article giving its constituents and a brief outline of its process of manufacture.

Following a few months of practical work, the Committee on Foods has now adopted a new form of submission of products which is here published and which will be available in reprint form to any one desiring to make a submission to the committee.

When a product is submitted to the committee, the form of submission should include:

1. Name of product.
2. Name of the manufacturer or distributor.
3. Information relative to trademarks and patents.
4. Definition of the product.
5. Statement of composition. This should include the amount of protein, carbohydrates, fat, moisture, water, etc. In cases in which claims are made for the presence of mineral salts such as iron, iodine, calcium, manganese or phosphorus there must accompany the submission an analysis of a market specimen of the product by an independent laboratory showing the percentage of these ingredients.
6. Process of manufacture. It is considered necessary to know the process of manufacture in order to know how this might affect the vitamin content.
7. Calories per gram. The use of such terms as "energy producing foods" must be supplemented by a statement of calories per gram.
8. Vitamins. When special claims are made for vitamin content, biologic tests by a competent laboratory or investigator on *market* specimens are required. The tests must be made on market specimens and not deduced from the fact that the raw materials used contained vitamins.
9. Comparative statement as to how the product conforms with the United States government regulations in reference to the particular category in which the product falls. All substances submitted to the committee must comply with the government regulations. In case a product has been accepted, the acceptance will not continue unless the product complies with the government regulations.

Scope of Considerations

The committee will consider all food products for which health claims are made as coming within its purview. For purposes of consideration the term "health claims" will be interpreted broadly; but the committee regards with disapproval claims of nutritive value which are so self-evident or so generally recognized that they do not warrant special mention, or which are in no way peculiar to the product offered for acceptance.

If the health claims made are satisfactory to the committee, in view of the composition and process of manufacture, the committee will accept the product for its book "Accepted Foods," and will grant to the product the use of the seal of the committee.

If the product is found to be outside the scope of the committee in that no health claims are made for it, and if the product and the advertising are otherwise satisfactory, the product will be exempted. A list of exempted products will be published in the book "Accepted Foods," and such products will be permitted to be advertised in the publications of the American Medical Association, provided the claims in the submitted advertisements are found to be acceptable.

Products for which health claims are made beyond those which are considered acceptable to the Committee will be refused admission to the book "Accepted Foods." Satisfactory revision of objectionable health claims may permit acceptance of the product, or withdrawal of all health claims may permit exemption. A list of rejected foods will be published in the book "Accepted Foods" together with the reasons for such rejections. Rejected products will not be permitted to advertise in any publication of the American Medical Association.

Infant foods, whether health claims are made for them or not, are considered to be within the scope of the committee's consideration.

RULES GOVERNING THE USE OF THE SEALS

Control of Insignia Adopted by the Council on Pharmacy and Chemistry and the Committee on Foods of the Council on Pharmacy and Chemistry

1. The seal may be used in advertising in circulars and on packages after acceptance of the product is announced in THE JOURNAL.
2. The seal, if it appears on the package, must be the only seal of such character and must not appear in conjunction with the seals of any other investigative organization.
3. The seal is to be used without any comment by the advertisers in any of the places mentioned as to the significance of the seal, unless such comment has been submitted to the Council or the committee and approved by them.
4. The Council and the committee will not object to a comment indicating that the seal signifies that the composition and process of manufacture of the product have been submitted and that the claims have been found acceptable by the Council or by the committee.
5. The maximum size of the seal permitted on the package shall be one-half inch in height or in diameter.
6. Should the product, for any reason, become unacceptable, all use of the seal must be discontinued within six months of date of announcement of action taken by the Council or the committee.
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THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 3, 1930

DEATHS OF PHYSICIANS

During 1929, deaths of 2,797 physicians of the United States were recorded in THE JOURNAL, as compared with 2,792 physicians during 1928 and 2,790 in 1927. The list includes also three in the Canal Zone and one each in Alaska, Porto Rico, the Philippine Islands, South America, China, Hawaii and Siam. The total published was 2,901. In 1929 the obituaries of sixty-five women were noted and in 1928 there were seventy-six women. In 1928 there were thirty-five obituaries of negroes, or eleven more than in 1929. The graduates of medical schools in the United States for the fiscal year ended June 30, 1929, numbered 4,446, whereas in 1928 there were 4,262. Deducting the number of physicians whose obituaries were published, there was a net increase in the ranks of the profession for the year of 1,649, or an increase of 179 over 1928.

Ages.—The average age at the time of death of those classified as of the United States was 64.9, a gain of about two years over the group published in 1928, which was 63.1. The age group in 1927 averaged 63.1; in 1926, 62.8; in 1905, 60.3; in 1910 and 1915, 60.4, and in 1920, 61. There was no centenarian in the entire 1929 group, but 102 physicians lived to be between the ages of 85 and 90, and seven lived to be 90 years or over. The number of 1929 obituaries representing the highest mortality in selected age period groups are as follows, with the 1928 figures, for comparison, enclosed in parentheses: 75-79, 261 (285); 70-74, 384 (393); 65-69, 398 (362); 60-64, 377 (374); 55-59, 367 (384); 50-54, 291 (279). The number of physicians living to be 85 or more in selected states were: Ohio, eleven in a total of 184; Indiana, ten in 130; California, seven in 141; Pennsylvania, six in 200; New York, six in 238; and Illinois, five in 210. In 1928 May with 279 deaths led, but in 1929 December led with 374 deaths, and this was followed by May with 251 and February with 244 deaths.

Accidental Deaths.—There were 202 physicians who died as the result of accidents in 1929, compared with 135 in the previous year. Automobile accidents numbered sixty-five, four less than in the previous year. In 1929, deaths from falls numbered sixteen and were second in the accidental cause group, as they were also in 1928, when there were twenty-four deaths. Ten deaths resulted from train accidents, eight from drowning, three from burns, twelve from gunshot wounds, five from overdoses of medicine, two from street car accidents and seventy from a large variety of miscellaneous causes. The most unusual entry this year was in the recording of nine victims of gas inhalation in the Cleveland Clinic disaster, bringing the total of gas accidents to eleven.

Suicides and Homicides.—The number of suicides, forty-seven, in 1929, is exactly the same as in 1928. The most frequently employed method was shooting, which accounted for twenty-two deaths in 1929. This was followed by the use of some form of poison in six cases; cut arteries in four; hanging in three; anesthetics and drugs, two each; jumping and drowning, one each, and in five suicides the type could not be ascertained. Six physicians were killed by patients; one was killed in a fight, one by a policeman, one by a stranger, and one by another physician.

Causes of Death.—The tabulation of causes of death corresponds for the most part with the International List of Causes of Death. There were listed a total of 3,243 causes, including contributing causes, for the 2,797 deaths published. The most common cause was heart disease, numbering 902 as compared with 884 of the previous year. Of the deaths from heart disease in 1929, 263 were due to myocarditis or endocarditis, and in 109 angina pectoris was specified; 168 of the total occurred prior to 55 years of age. The second most frequent cause of death in 1928 was cerebral hemorrhage, but in 1929 pneumonia with 362 deaths was second and of these 229 were of the lobar type. Third in the list was cerebral hemorrhage with 336 deaths, and paralysis was represented with twenty cases. Nephritis with 206 deaths, of which twenty-eight were of the acute and 178 of the chronic form, was the fourth greatest cause. All types of cancer, causing 202 deaths, occupy fifth place, as they did last year, but with a decrease of forty-six this year. There were fourteen cancers of the buccal cavity including the throat, thirteen of the prostate, four of the skin, sixty of the liver and stomach, forty-three of the intestine, and sixty-six located in unspecified regions. One hundred and thirty deaths from cancer occurred previous to the age of 70 years. In 1929 only three benign tumors were reported. In our tabulation of causes, arteriosclerosis holds sixth place with 143 deaths, which is twenty-four less than the record of the previous year; other diseases of the artery number five. Accidents in both years hold seventh place, with 135 causes in 1928 and 134 in 1929; influenza was the eighth most frequent cause of death, with a record of ninety—an increase of forty-six over last year. Tuber-

culosis is the ninth on the list, with seventy-five deaths. In 1929 uremia, with seventy-one deaths, was tenth; in 1928 it was also tenth, but in that year there were only sixty deaths from this cause. Embolism and thrombosis, with sixty-four deaths for 1929, showed an increase of seven over 1928 and a decrease of six from 1927. Forty-seven deaths were due to suicide; diabetes mellitus was reported in forty-six cases, senility in thirty-seven, disease of the prostate, exclusive of cancer, in thirty-four, and other diseases of the genito-urinary system and adnexa in eighteen. Septicemia was responsible for thirty-one deaths, ulcer of the stomach for thirty, and other diseases of the stomach, not including cancer, for two. In comparatively close ratio are the deaths due to general diseases of the digestive system, twenty-nine; cirrhosis of the liver, twenty-three; appendicitis and typhlitis, twenty-two. The tabulation of causes that represent a few deaths under each head is as follows: meningitis, nineteen; biliary calculi, seventeen; pernicious anemia, fifteen; encephalitis, twelve; cholecystitis, thirteen; peritonitis, twelve; diseases of the nervous system exclusive of paralysis, twelve; acute rheumatism, ten, and unspecified causes, ten. Leukemia was responsible for nine deaths, asthma for nine, diseases of the bones and organs of locomotion nine, homicides eight, typhoid eight, and diseases of the respiratory system other than those specified elsewhere in this report, seven. Six were caused by erysipelas, six by tuberculosis other than pulmonary, five by brain tumor, five by dementia paralytica, and five by hernia. There were four deaths each due to chronic bronchitis and to pleurisy, and three deaths each from aneurysm, Hodgkin's disease and infectious diseases not otherwise specified. Two physicians each died of goiter, food poisoning, malaria, chronic rheumatism, and disease of the spine other than dementia paralytica. A large list of causes are given for one death each: pellagra, typhus, agranulocytosis, local anesthetic, epilepsy, drug addiction, chorea, frozen in a blizzard, amebiasis, acute yellow atrophy, gland fever, skin cancer, Addison's disease, alcoholism, locomotor ataxia, disease of the organs of hearing, diseases of the veins, diseases of the circulatory system not otherwise specified, diseases of the skin, amebic dysentery, brain abscess, general anesthetic and hanging.

Civil Positions.—The number of decedents who served in the World War was 193; sixty-seven physicians were veterans of the Civil War and thirty-six of the Spanish-American War; teachers in medical schools numbered 144; sixty-four had been members of boards of health, sixty of boards of education; fifty-two were health officers, forty-one mayors, twenty-nine coroners, twenty-one druggists, seventeen bank presidents, sixteen members of the boards of medical examiners, twenty-one legislators, ten members of the U. S. Naval Corps, seven of the U. S. Army Corps; six had been editors, seven members of the city council, four postmasters, three missionaries and three clergymen; two had been justices of the peace, two authors, two dentists, one a lawyer and one a judge.

Association Officers.—Obituaries of the following past officers of the American Medical Association were reported during 1929: two past presidents, four vice presidents, one trustee, eighteen members of the House of Delegates, thirteen officers of sections, three members of a council, five secretaries of state societies and thirty-six presidents of state societies.

THE PROBLEM OF OTOSCLEROSIS

The study of deafness, particularly in school children, is an increasingly interesting problem to public health officials. While the relation of infections to middle ear disease has received much attention, the importance of hereditary influences as well as of glandular or other metabolic disturbances to inner ear deafness is still obscure. Weber,[1] working at the George Williams Hooper Foundation for Medical Research of the University of California, under the Coleman Memorial Fund for Deafness, has recently discussed certain diseases in which the histologic appearance of the bones resembles otosclerosis or which may have a possible etiologic relation to it. In his complete analysis of the histogenesis of otosclerosis and of osteodystrophia (osteitis) fibrosa, many questionable aspects of histology have been cleared up and certain difficulties of interpretation have been explained.

The principles of the histogenesis of osteodystrophia fibrosa (so-called osteitis fibrosa) are identical as far as the comparison of the pathogenesis is concerned. Both diseases represent a degenerative-reactive-reparative process. After degeneration of old bone or cartilage, an irritation of the bone-forming system occurs, leading to the appearance of giant cells and consequent resorption. The spaces are filled immediately with undifferentiated mesenchymal tissue. A differentiation goes on, at first progressively, giving rise to fibrous marrow and so-called fiber bone. Soon, however, the progressive phase is interrupted by regression. Lack of further differentiation and faulty differentiation characterize the end picture of the bone in both diseases. Thus, a malformation appears which Weber designates as hamartoplasia in contradistinction to hamartoma. Otosclerosis itself, no doubt, represents such an hamartoplasia.

Moreover, otosclerosis may be regarded as a local hyperostotic parotic or hyperostotic sclerotic form of osteodystrophia fibrosa; that is, as an "osteodystrophia otosclerotica." As such it evidently belongs to the same group of metapoietic diseases (Christeller) as Paget's and von Recklinghausen's disease, which represent generalized forms of osteodystrophia fibrosa.

1. Weber, Moritz: Otosclerosis in Its Histogenic Relations to Osteodystrophia Fibrosa (Ostitis Fibrosa), Arch. Otolaryng. **11**: 1 (Jan.) 1930.

Only cases representing a focal "osteodystrophia otosclerotica" should be designated as otosclerosis, i. e. genuine otosclerosis.

In cases in which there is a generalized osteodystrophia fibrosa, the diagnosis of genuine otosclerosis can be made only in von Recklinghausen's disease (osteitis fibrosa with pseudotumors and cysts) and then only if the changes themselves within the labyrinthine capsule represent a pseudotumor (hamartoplasia). According to Weber, the diagnosis of genuine otosclerosis in Paget's disease (osteitis deformans, without pseudotumors and cysts) is impossible from the histopathologic point of view. Between the diagnosis "clinical otosclerosis" and histologic otosclerosis (genuine otosclerosis), many paradoxes exist. In order to assist the research worker in collecting exact data, the clinician should be familiar with the details of this technical study.

THE LAXATIVE ACTION OF BRAN

The bulky intestinal residue produced by indigestible food ingredients undoubtedly can play a part in promoting the motor activities of the digestive tract. Hence "roughage" or "ballast" in the food intake has come to be regarded as a prophylactic against certain types of constipation. There are scientists who might debate whether the alleged need of bulk in the diet and its consequent influence on the intestinal functions has not been overemphasized in recent years. Writing several years ago, the author of "Useful Cathartics," published under the auspices of the American Medical Association,[1] remarks: "The 'back to nature' cry of the health faddist need not lead us to the habitual admixture of sawdust, bran or similar substances to our food. When, however, there is constipation, the question whether increase in cellulose is indicated is important. Unless the patient is of the type characterized by excessive digestion of cellulose and flatulence therefrom, and unless the patient suffers from gastric motor insufficiency or intestinal stenosis, we should favor cellulose in the diet. There are three forms in which cellulose may be added to the diet: as fruits, vegetables and bran. Of these, bran is the richest in cellulose and is one of the most effective prophylactics of constipation."

Bran has acquired an extensive vogue in this country as an adjuvant to the diet to correct the widespread tendency to constipation. One of the features that particularly serve to recommend it in a popular way is the fact that it is not a drug. Bran is an ingredient of whole wheat products; it therefore is thought of as a natural ingredient of some types of "our daily bread." The bran preparations that are commonly available include some nitrogenous matter, mostly protein in a physical form that is rather resistant to digestion. There is, further, a large inclusion of indigestible carbohydrates, among which cellulose is a conspicuous component. It is not so commonly understood that pentosans also contribute to the make-up.

Wheat bran also yields a small quota of a phosphorus compound usually designated "phytin." It is probably inosite hexaphosphate, occurring as a salt of an inorganic base. To the latter, special laxative properties have been ascribed by various writers without, it must be admitted, much cogent evidence. The abundance of inorganic matter in bran might also conceivably contribute to laxation. Working at Yale University, Williams[2] found that washed bran (which has lost much of its phytin content) still possesses a laxative effect most of which is attributed to the crude fiber content. Studies of Falcon-Lesses[3] at the University of Michigan Medical School indicate anew that phytin-free bran has lost none of the laxative qualities of bran. The phytin and mineral ingredients are not effective in the quantities in which they occur in the usual effective doses of bran. The latter acts as a laxative in a quantitative fashion—increasing amounts of bran produce increasing weights of feces. Falcon-Lesses' conclusion is that bran owes its laxative action to the crude fiber and pentosans that it contains.

1. Fantus, Bernard: Useful Cathartics, Chicago, American Medical Association, 1920.

2. Williams, G. A.: A Study of the Laxative Action of Wheat Bran, Am. J. Physiol. 83: 1 (Dec.) 1927.

3. Falcon-Lesses, Mark: The Cause of the Laxative Action of Bran, J. Nutrition 2: 295 (Jan.) 1930.

Current Comment

COFFEY-HUMBER METHOD FOR CANCER

The remarkable publicity accompanying the introduction of the Coffey-Humber method for the treatment of cancer passed briefly into a quiet phase, leaped upward with the eastward jaunt to the congressional hearing, again became quiescent for a few weeks, and burst forth last week in a Sunday supplement feature. In the meantime pathologists, surgeons and other conoscenti who have investigated the method express nothing but profound disappointment with both the clinical and the pathologic results. These experts indicate that postmortem examinations, which have been made in at least thirty cases, do not reveal any definite specific destruction of cancer tissue or evidence that the progress of the spread of cancer in the bodies of the afflicted patients has been retarded. Several clinicians who have watched the results closely affirm that the patients have been relieved of pain after the first one or two injections but that it usually requires more opiate thereafter to control the pain. These observations are obviously what might be anticipated in any new method of treatment of cancer. Perhaps it may not require the five years emphasized by Geschickter as the limit of time for the determination of the virtue of any new method of treatment of cancer to indicate that this method is not what was earnestly hoped for when it was first presented. Should the failure be complete, the disappointment of the profession will be as great as, if not greater than, that of the proponents of the method.

THE PORTER NARCOTIC BILL

The Chicago *Tribune*, after publishing an interview with several representatives of the American Medical Association concerning the attitude of the Association on the Porter antinarcotic bill, has followed with an editorial which expresses clearly and distinctly the point of view of the medical profession with regard to medical legislation. The *Tribune* editorial is as follows:

A LAW TO PROMOTE PAIN

Representative Stephen Porter of Pennsylvania has introduced a number of bills at this session of congress for the control of the traffic in narcotics. One of the bills, establishing a bureau of narcotics, has already passed the house. A companion measure would forbid even a physician to dispense narcotics unless he was licensed to do so by the federal bureau.

The creation of a bureau of narcotics we regard as a doubtful expedient. The limitation on the right of a doctor to give drugs where he believes they are indicated we regard as something more than inexpedient; it is unsound in principle and is likely to cause much needless suffering in practice.

The tendency among legislators is to vote for any measure of narcotic control that the racketeers of the uplift propose. Congressmen fear that a vote against such measures will be regarded as a vote in favor of the dope traffic. They assume from the reading of much superheated propaganda that narcotics are wholly evil and that there is no legitimate use for them. The assumptions are false. Narcotics have caused much suffering to those addicted to their use, but viewed in perspective these drugs are a blessing rather than a curse to mankind. They have blotted out pain which could scarcely have been endured otherwise. They have saved many more lives than they have cost. Every medical school in the country gives careful instruction in the proper use of narcotics and every practitioner knows their habit forming character.

There is little danger in permitting doctors at least their present freedom in prescribing opiates, but there is much danger that additional red tape will mean additional human suffering which might have been relieved but for the government's interference.

CALCIUM IN IRRITATIVE EDEMAS

Vigorous efforts have been expended recently to promote the therapeutic employment of calcium preparations. Calcium is, indeed, the most conspicuous inorganic element in the body, though most of it is deposited in rather inert form in the bones. In certain forms of physiologic stress these stores are drawn on for supplies of calcium to fill imperative needs. This in itself indicates that there are times when the available intake does not suffice for bodily well being. How to remedy or avert an impending deficit is a problem for the science of nutrition, perhaps more so than for therapeutics. Nevertheless, persons who deal with drugs either professionally or commercially have not hesitated to approach the problem with plans for all manner of calcium therapy. Some of it doubtless has found justifiable favor; but there are also many currently recommended procedures that lack substantial scientific recommendation. Among these is the employment of calcium salts in the management of edemas of inflammatory or irritative origin. It has long been believed that injection of calcium salts into animals reduces their susceptibility to local irritants, such as mustard, probably because of a lessened permeability of the smaller blood vessels.[1] This has formed the basis for the use of calcium in the treatment of urticaria and to prevent serum rashes. A recent writer[2] has remarked that the claims of specific, antiedemic action appear to have more an authoritative than a scientific basis. Edema is affected by many physiologic factors, notably those of circulatory character. Hence it becomes difficult to formulate tenable conclusions when so many variables are involved in an experiment. However, Tainter and VanDeventer[2] of the Stanford University School of Medicine in San Francisco have recently tested the antiedemic actions of calcium lactate in experimental irritative edemas under carefully controlled conditions. According to their results the element is inert and useless in these states except as it may act at the expense of circulatory injury. These investigators state frankly that the alleged specific, antiedemic action of calcium lacks a satisfactory experimental basis, and the theoretical antipermeability effect of calcium on tissues and organs in situ lacks convincing evidence. The therapeutic usefulness of calcium in clinical irritative edemas is seriously doubted. In the light of such results the clinician must henceforth recognize the problematic state of our knowledge and not place too much confidence in a debatable therapeutic method.

1. Hatcher, R. A., and Wilbert, M. I.: Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915, p. 407.

THE NATURE OF SECRETIN

Since its discovery by the English physiologists Bayliss and Starling, in 1902, secretin has awakened unusual interest among physiologists and physicians because it represents a unique example of the class of compounds now known as hormones. The secretin obtainable from the intestinal mucosa is, after introduction into the circulation, a potent promoter of the secretion of pancreatic juice and bile. Numerous investigators have reported that such a stimulant substance is widely distributed in both animal and plant tissues. Extracts from various sources have been found to augment the pancreatic flow much as the product prepared from the intestine does. The specificity of location of secretin was thus called into question when muscle tissue or spinach extracts were demonstrated to be potent. Presently, however, it was ascertained that various compounds that produce vasodilatation, as exemplified by a lowered arterial pressure, tend to incite pancreatic secretion. The effect is due to the vascular changes. Most tissue extracts contain vasodilatins in varying proportions—a circumstance that may explain their observed action on the pancreatic flow. Of late it has become possible to make tissue preparations that are freed from vasodilatins such as histamine. By the application of such methods, Drewyer and Ivy[3] of the Northwestern University Medical School secured extracts of diverse tissues, namely, brain, liver, lung, kidney, pancreas, stomach, intestine and the vegetable spinach, without any pressure-lowering potencies and therefore evidently free from vasodilatins. No increase in the secretion of pancreatic juice was noted with any of these except the extracts of the intestine and stomach. The results show

2. Tainter, M. L., and VanDeventer, William: The Antiedemic Actions of Calcium in Experimental Irritative Edemas, J. A. M. A. **94**: 546 (Feb. 22) 1930.

3. Drewyer, G. E., and Ivy, A. C.: On the Nonubiquitous Occurrence of Secretin, Proc. Soc. Exper. Biol. & Med. **27**: 186 (Dec.) 1929.

clearly that the secretion caused by various tissue extracts other than gastric and intestinal mucosa is due to the presence of vasodepressor substances and not to the specific substance called secretin. About ten times as much secretin can be extracted from the intestinal mucosa of the first six feet of the intestine as from the mucosa of the pyloric antrum. There is at least some satisfaction in having proof of the specific nature of secretin. It is chemically distinct from histamine and choline, but its precise chemical make-up remains to be elucidated.

Association News

EARNED INCOME OF PHYSICIANS

The Board of Trustees reported to the House of Delegates at the Portland session [1] that demands for the payment of additional income taxes had been made on physicians operating clinics and employing assistants, who, in the computation of their federal income taxes, had regarded their entire professional incomes as "earned income" and who, in computing their income taxes, had taken credit for 25 per cent deductible by law on the gross tax on earned incomes. These demands had been based on the theory that the amount received by such physicians for the treatment of patients who had been assigned to assistants for general or special supervision was not in its entirety earned income. The earned income in such cases, collectors of internal revenue contended, consisted of the difference between the amount received for the treatment of such patients and the amount paid by the clinic as salaries or commissions to the assistants to whom they had been assigned. Drs. A. C. Arnett and Frank S. Crockett, operating a clinic at La Fayette, Ind., had insisted on the incorrectness of this interpretation of the Revenue Act and notwithstanding the insignificant amounts involved in their own cases they had, in the interest of the profession generally, employed counsel to resist the demands made on them, so as to obtain an authoritative interpretation of the law. The Board of Trustees of the American Medical Association employed counsel to represent the interests of the medical profession generally. As a result, the Commissioner of Internal Revenue has just issued instructions that clarify the situation. The claim made on behalf of the medical profession of the right to regard as earned income the total income of physicians operating clinics, without deduction on account of salaries paid professional assistants, is sustained. The commissioner makes it clear that instructions previously issued by him were not intended to deny the taxpayer the right to consider as earned income the entire amount received as professional fees, if the taxpayer is engaged in a professional occupation such as that of a doctor or a lawyer, even though the taxpayer employs assistants who perform part or all of the services, provided the patient or client is in fact the patient or client of the taxpayer and looks to the taxpayer as the responsible person in connection with the services performed. The same rule applies to income received as professional fees from a professional partnership even though the partnership employs assistants who work on a salaried basis, provided the patients or clients are those of some active member of the partnership and look to him as responsible for the services performed. Physicians who have been called on to pay additional federal income taxes on the theory that the total amount received by a physician for his services was not earned income if he was associated in the operation of a clinic or a member of a partnership, employing assistants, may have their cases adjusted on the basis of the new ruling by referring to IT-MIMEOGRAPH, COLL. No. 3802, R. A. NO. 550-IT: E: RR.

1. J. A. M. A. 92: 1851 (June 1) 1929.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Twenty-Sixth Annual Meeting, held in Chicago, Feb. 17, 18 and 19, 1930

(Continued from page 1327)

AMERICAN CONFERENCE ON HOSPITAL SERVICE

FEBRUARY 18—MORNING

HOSPITALS AND THE COST OF MEDICAL CARE

The Cost of Medical Care from the Point of View of the Hospital

DR. BERT W. CALDWELL, Chicago: Not so long ago the hospitals of our country were in the homes of the people. The institutional hospitals were largely confined to the metropolitan centers, where conditions were somewhat better than in the home, but in few ways subscribed to our present-day ideas of hospital standards. Under such conditions the efficient care of the sick, either in the home or in the hospital, was seldom possible. Surgical mortality ran high; diagnoses were uncertain and only occasionally correct. Treatment was empiric and long continued. Everything—medical fees, drug bills, nursing service, hospital care—was inexpensive, and the patient complained of the cost of medical care, and entered the hospital as a last resort.

As inexpensive as all these things were, they were far more costly to the patient then than the services he receives today. His confinement to his bed or room was always long drawn out, whether he was suffering from disease or convalescing from a surgical operation. Mortality ran high and morbidity was frequent and long continued. The cost for hospital care at that time was given serious consideration and patients would not go to the hospital because of the difficulty of finding funds to pay the physician and the hospital.

Then followed the evolution of the hospital. New hospitals were built in all of our metropolitan centers, and our smaller cities developed a hospital program. Not only did the cost of the construction of hospitals increase but the cost of operating these institutions became a serious problem. In addition to the care of the sick, other responsibilities were placed on the hospitals. They became educational centers for the training of medical graduates, interns and pregraduates in medicine, dentistry and allied professions, and of nurses, social workers and dietitians. They became centers of medical research, where both clinical and laboratory material were at all times available. They became schools of training in preventive medicine and public health. To conduct these activities properly, the costs of hospital operation were appreciably increased.

The hospital administrator has for years been conscientiously striving to effect a reduction in the cost of hospital care. He is doing everything possible to make that care more efficient and less expensive. That he has succeeded will be readily acknowledged if a comparison were made between hospital operation and the operation of any other legitimate business. It is economically wrong and manifestly unfair to add to the financial burden of the patient who pays for his hospital service the cost of the care of the indigent patient. The state, and this includes the city, county or state, should provide some equable compensation to the hospital for the service rendered the indigent patient, and the hospital should share, as it does share, the cost of its service with the patient of moderate means. The cost of hospital care for the patient of moderate means may be reduced:

When the capital investment in hospitals is confined to well built, well ventilated, well lighted buildings, adequately equipped to provide the best of diagnostic and treatment facilities for the patients.

When a larger proportion of ward and semiprivate accommodations at a rate much lower than private rooms is provided.

When the public is educated to use accommodations in keeping with its financial ability to pay for hospital service.

When the public of its own choice selects moderate priced hospital accommodations instead of expensive private rooms.

When the patients are educated by their attending physicians and by the hospital authorities to use the floor nursing service provided by the hospitals at all times when special nursing service is unnecessary.

When the cost of caring for indigent patients is equably distributed between the state and the hospital.

When economy is exercised in the purchase and use of hospital supplies, equipment and facilities.

When the average citizen as a class provides in his budget or his financial arrangements against the day when he or his family will need hospital care.

The Cost of Hospital Care from the Point of View of the Hospital Staff

DR. JAMES B. HERRICK, Chicago: The following are several factors that are more or less directly concerned in the cost of medical care: Often the cost to the patient might be lessened by rigid economies in hospital construction and management.

The hospital has assumed a double function as to the nurse. It not only gives nursing service to the patient but furnishes training to the nurse preparing for her profession. Improvements in both these functions have added to the cost of medical care. And the consumer, the patient, has to pay at least a part of this increase.

Changes in nursing service would seem to be advisable.

To house and feed interns costs money. Yet they are regarded as so necessary that many hospitals pay the recent graduate a salary. In many hospitals, also, there are paid residents. Few who are familiar with the workings of a hospital will dispute the statement that the addition to the cost of medical care imposed by the employment of interns and residents is more than offset by the increased safety and efficiency of the medical service rendered the sick.

The patient sometimes goes to the hospital when his physician tells him it is unnecessary, or he goes without consulting his physician. There is a well meaning but often unintelligent and extravagant desire for thoroughness in examination and treatment that is almost a fad. The hospital is thought to be the only place where such study and treatment are possible. There is also a notion that the more one spends for medical advice, the more one gets. So there are expensive rooms, private nurses, repeated consultations, many roentgen examinations. Much of this may be unnecessary. How to adjust charges for operating room service, anesthetics, roentgen examinations and the various kinds of laboratory work is a difficult problem. Several plans have been tried and none seem entirely satisfactory. One difficulty is that laboratory tests and instruments of precision have multiplied so rapidly that the hospital has had a hard time trying to keep up and adjust service and charge.

There are physicians who are unscrupulous as to charges and even dishonest as to diagnosis and treatment. They are to be classed with shyster lawyers, dealers in worthless second mortgage bonds, and crooks in general. There are physicians who, although honest, are commercially minded. They charge as high fees as they dare. Some physicians charge too much. It should be more the custom for physician and patient to have a frank talk as to the approximate cost of the contemplated stay in the hospital. It is false modesty on both sides that leads them to shun a free discussion of the unavoidable business aspect of the transaction. There are many ways in which the physician may lighten the cost for the patient. It may not be necessary for the patient to go to the hospital. The physician may be able to do the necessary work in his office. An outside clinical laboratory may make the roentgenogram and the electrocardiogram. It can estimate the metabolic rate and make the Wassermann test. Not all tests are necessary in every case. Some may well be omitted. Consultations are unnecessarily multiplied. Physicians could often shorten the hospital stay. Hospitals are becoming too standardized. The rules are too fixed. There is an inflexible scale of prices. Physicians also get into a rut as to examinations, treatment, fees. The patient of moderate means is up against a hard proposition when he enters the door of such an institution. By the time he has gone through the machine he may be so deeply in debt that it takes months or years to get out.

If there is one suggestion the attending physician would make to hospitals, nurses and physicians, it is to treat patients not as a class but as individuals, and treat them as persons, as human beings, and not alone as cases.

So far as possible, one should preserve the personal touch that meant so much in the ideal relation that existed between the patient of fifty years ago and the family physician. If this is done, patients will be happier and better cared for and the burden of cost will be lightened.

Hospitals and the Cost of Medical Care from the Point of View of the General Practitioner

DR. ARTHUR T. HOLBROOK, Milwaukee: This paper was published in THE JOURNAL, March 29, page 903.

The Cost of Medical Care from the Point of View of the Layman

MR. WILFRED S. REYNOLDS, Chicago: As the layman looks squarely at the workings of the American system covering the transactions between producer and consumer of medical practice, he notes certain unique factors or relationships which, because of their uniqueness, have colored in a peculiar degree the whole process. He realizes the extremely personal character of illness, and its emotional effects on the patient and on those in filial touch with him. He sees the corresponding highly intimate, and at the same time professional, relation borne by those who minister to the patient's welfare. In this there is a combination of human and spiritual factors intermingling in a process in which producer and consumer lose their identities as in any sense the parties of a business transaction. Material considerations are lost sight of, particularly by the patient, and also by the truest practitioner. Yet the same layman understands that today the practitioner not only must maintain his own peculiar effectiveness with the patient and his needs but must make available to his patient the wisdom and skill of his entire profession. The layman sees further that to insure this type of understanding relationships between physician and patient, to bring this type of qualified service within the reach of every man, woman and child, requires a scientific procedure applied to the adjustments in the business of health repair and preservation such as has already gone so far in the technic of individual treatment of patients. He knows that as yet this has not been accomplished. He ventures to suggest that fundamentals of medical practice in the broad sense and business principles may find a point of merging; that physicians will ponder and find in the organization methods of business certain principles applicable to organization in health service; that lay representation in other fields of human endeavor may understand the factors in medical practice essential to be conserved, and that gradually a service will be perfected the processes of which will be a burden to none who receive it, give adequate compensation to those who render it, and reach all who need it with a maximum of healing effect.

DISCUSSION ON PAPERS OF DRS. CALDWELL, HERRICK AND HOLBROOK AND MR. REYNOLDS

MR. ASA S. BACON, Chicago: Dr. Herrick spoke about the articles that have been written in magazines and in newspapers which criticized hospitals severely, but we must remember, with all due respect to these people, that this is an age of fans. I checked up on fifty different articles and found that only four of them were written by men who had ever been concerned with hospital administration. We are told that middle class patients do not want charity but wish to pay their way; that the hospitals should have rates that they can afford to pay; that we should give them service on the instalment plan. From all the agitation that has been going on, one would think that there never was any middle class until the World War. The fact is that we have had a middle class as far back as 2300 B. C. in the Babylonian domain, where laws were in vogue that protected the middle class. During the past fifty years hospitals have cared for more middle class people than charity patients. Twenty-five years ago the middle class patient was content to go into a ward bed. Today, a certain percentage want private rooms. In the transactions of the American Hospital Association twenty-five years ago, this question of the

middle class patient came up. The question of caring for this class of patient at a rate that he can afford to pay has become more acute in the past few years because of an entire change in our social condition brought about by the automobile, the radio and various electrical devices for the home, higher wages, shorter hours, more recreation. This is an age of service. People want it and they demand it. In twenty-five years the hospitals have reduced the average stay of the patient 100 per cent. We have cut down the necessity of building so many hospitals. Today we can take care of two patients where twenty-five years ago we took care of only one patient. If we could cut down the average stay of the patient, and that is where the physician can help, say one day, we save 10,121,000 days' care of patients. Suppose 25 per cent of the patients are middle class. If we could cut down their stay in the hospital, it would mean a saving of 2,530,000 days. If the patient was paying $4 a day, one would be saving $10,000,000 for the middle class of patients, by speeding up departments, by the physician seeing the patient as soon as he is admitted, and by speeding up work in the laboratory, x-ray and other departments.

DR. JAMES A. BRITTON, Chicago: At least 10 per cent of hospital beds in this country are occupied by patients who could be better cared for in specially built convalescent institutions for less money—$2 a day in this sort of an institution as against $4 a day in a hospital. The cost per bed for such an institution is one-fifth that of a modern hospital—$1,000 per bed instead of $5,000. Almost any kind of case, surgical or medical, when the acute stage has been passed, could be cared for in such an institution. Any community that has 1,000 hospital beds needs at least 100 beds for convalescents.

MR. ALFRED C. MEYER, Chicago: In 1920 fourteen metropolitan districts of the United States, including New York, Chicago, Philadelphia, Detroit and Los Angeles, contained 22.6 per cent of the entire population. We know what this grouping means in the way of specialization and increased cost. In 1920, 51 per cent of the inhabitants of the United States were living in the so-called urban districts and 49 per cent were in the rural districts. City life has added materially to the cost of hospital care. The American people are accustomed to service and are demanding more. The American family budgets many things, particularly since the increase in instalment buying, but, except in a few instances, there has been no budgeting for sickness. The tendency of the age is toward consolidation. I think that the same thing is coming in the medical profession, as in all walks of life. Group clinics will reduce the cost of illness because the same economic changes that accrue in associations in industry naturally accrue to physicians in group associations. Another method for providing for the cost of illness would be through the institution of health insurance. One of the most helpful points in the battle toward the reduction of the cost of illness is the tremendous interest taken by people of wealth in the study of preventive medicine. Through the enormous amount of research work done throughout the whole world, illness has been much reduced. This one factor will do much to reduce the cost of illness.

DR. FRANK BILLINGS, Chicago: There is specialization in all walks of life. There is more specialization in medicine. Of all the men and women who graduate in medicine annually, 40 per cent go into specialties, many unqualified to do so because they have not taken postgraduate courses. This, of course, reduces the number of general practitioners. Modern medicine has developed instruments of precision in diagnostic, laboratory and biologic tests, all of value, but they are utilized unnecessarily. Every well equipped hospital has instruments of precision and laboratories. Unfortunately, medical men have encouraged their use. Somebody said that the methods of diagnosis of years ago were not accurate. I would say that physical diagnosis was better fifty years ago than it is today. We did not have function tests. Physicians do not practice as we did. In our day no patient could go to a physician without being stripped to the buff when given a physical examination. The economic status of the people of this country is better than it was. They are better able to pay for medical service. The cost of medical service has risen as the cost of other labor has risen, but it is not so much higher than it was twenty-five years ago as compared with the salaries and wages now paid. I agree with Dr. Holbrook that it is a tempest in a teapot anyway. There are a lot of things the medical profession and the hospitals can do to diminish the cost of medical care for a certain class of people.

DR. M. T. MACEACHERN, Chicago: Have we too many hospitals? We could cut down about half of them. In one city of 200,000 there are thirteen hospitals with thirteen overheads where three or four would answer the purpose. That is something that we should also think of in this multitude of causes of the cost of hospital care. A second point is this: Has the county and state hospital tax support perhaps some effect on the increased costs, since every hospital must do from 12 to 25 per cent of free work without endowment? Would it lessen the cost to all these hospitals that are doing charity work if, instead of taking it out of the earning pay patient, all the monies we are paying in subsidies were distributed among these other hospitals, not only providing a means of taking care of the charity cases but a big ward service? No hospital can be a really scientific institution without more free wards and teaching wards.

DR. AUSTIN A. HAYDEN, Chicago: What Dr. Billings said in closing is the truth. Much of this discussion is a tempest in a teapot. The cost of medical care will always be high and hospitalization, medical care and nursing service will always come as a calamity to the individual and to the family. I do not see how it can be greatly reduced. Another thing that must be taken into consideration in hospital costs is the percentage of bed occupancy. The best hospitals in the United States are only 70 per cent full all the time. In regard to budgeting for sickness, little attention has been paid to it. On the other hand, any expenditure of money by the individual or the family is met by some sort of plan or budget, whether it be credit plan or actual saving in advance. Some sort of scheme such as this must be worked out if the costs of medical care are to be met by the general public. There are many people who have never been in a hospital who are talking a great deal about the cost.

FEBRUARY 18—AFTERNOON

HOSPITAL PROVISION FOR THE NEGRO RACE

Hospital and Outpatient Facilities for the Adequate Care of the Sick

DR. PETER MARSHALL MURRAY, New York: It is recognized that the health needs of more than one tenth of the population of this great country are being met "after a fashion" by public and private institutions, but this very meeting shows that intelligent opinion is aware of the fact that these facilities are far from being adequate in quantity or quality. While the negro still uses to a large extent such free hospital facilities as are open to him, his experience leads him to feel that he will get better treatment if he pays something for his medical care. Consequently, his willingness to pay often exceeds his ability and yet in the 200 negro hospitals practically all of the beds are pay beds.

The unfair practice well nigh general in this country of excluding negro physicians from the staff of hospitals where negroes are patients imposes a distinct psychologic handicap on the negro patient and makes the result of treatment given him less effective. He is less inclined to apply for hospital service for preventive and early treatment and too often submits only after he has become a grave risk.

The educational value of an adequate hospital to the physician and the community has a place of importance almost equal to that of the care of the sick. A negro patient suffering with a ruptured ectopic pregnancy, an acute suppurative appendicitis, or an acute intestinal obstruction is apt to receive standard treatment anywhere in the United States when once admitted to any hospital. An adequate hospital program for negroes in such a community would mean that, prior to admission, there had been early diagnosis, prompt reference to the hospital and community confidence.

It is my firm belief that in any hospital program for negroes, emphasis should be placed on the weakest spots in our armor

of health. These are: tuberculosis, venereal disease and maternal and infant welfare.

In addition to the study of the whole interplay of social and economic factors, this situation demands education on the part of the negro profession and negro public. The negro physician must be more public health-minded. The beginning of his public health-mindedness should be in his undergraduate days. The medical curriculum, at least in the two negro medical schools, should place especial emphasis on the problems which the negro physician must face in his active professional life. The progress that has been made in the last five years toward the solution of these problems is simply amazing. Philanthropy has been most generous and wherever a broad, well considered program has been presented, cooperation has been easily secured.

The remedy, then, as I see it, lies in: 1. A greater degree of the practical application of professed Americanism—a full opportunity for every American citizen—specifically the removal of restrictions against negro physicians as staff members in public hospitals.

2. The establishment or development of model hospital units in key centers of negro population in the country. In order, however, to assure success and avoid the pitfalls that have accounted for the failure of so many negro hospitals, these centers will require:

1. Active participation of the intelligent lay negro public.

2. Properly trained hospital administrators, possessing business acumen and special hospital training.

3. Active participation of the competent and sympathetic white profession in actual staff responsibilities.

Provision for Training Colored Medical Students

DR. BASIL C. H. HARVEY, Chicago: As a result of certain plans now materializing at Chicago, we can continue to admit capable and carefully selected colored students and to give them every facility and opportunity available to any students in the first two years. And we can do it hereafter with much more satisfaction than heretofore, because we have had to tell such students in the past that we would be unable to give them adequate training in the third and fourth years, and have had to advise them to seek their clinical training elsewhere. I should like to say here that some of the colored students whom we have had in the first two years have shown unusual ability and admirable qualities of character and it is a great satisfaction to me to be able to announce on behalf of the University of Chicago that hereafter they can look forward to unrestricted opportunity within the university in the work of the third, fourth and fifth years.

Through this cooperation it is hoped that there will be provided:

1. Skill, science and adequate clinical and laboratory equipment for the treatment of the negro sick.

2. Thorough clinical training of colored medical students and interns.

3. Opportunity for postgraduate training of colored physicians.

4. Further research in diseases to which negroes are especially susceptible.

5. Training of negro superintendents and administrators of hospitals, of negro nurses, technicians, public health workers and social workers.

6. An atmosphere and environment in which capable negro medical men will find incentive and encouragement to the highest development and achievement.

The Need for a Sound Professional Preparation for Colored Nurses

MISS ADDA ELDREDGE, Madison, Wis.: There is no doubt as to the spirit and ability of the colored nurse if she is properly educated and trained. There is a great need for her in the public health field nursing her own people if she is well educated and well trained. In the North and in some of the Southern states, there is an insufficient amount of work in the private duty field, but this is also true of the white nurse doing private duty. In most of the Southern states among the colored people there is great need though little demand for her and no money to pay her or little realization of the benefits she can confer. Effort should be made to raise the entrance standard of education in schools of nursing for colored women to four years in an A 1 high school. Effort should be made to give greater professional standing to these well educated colored women that they may find nursing as attractive as teaching or social work. Apparently Northern trained colored nurses fit less well into Southern communities; therefore, the effort should be to establish and maintain in the South high class schools of nursing for colored women. It is evident that the colored nurse as well as her white sister needs the soundest and best education that she can get. The crying need in all cities or communities where there are large numbers of colored people is for more colored nurses of sound education and training.

(To be continued)

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 o'clock, daylight saving time, Monday, Thursday and Saturday; Tuesday at 10:15; Wednesday at 10:45, and Friday at 9:45, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of May 5-10 is as follows:

May 5. Snakes and Snakebites.
May 6. Snakes and Snakebites.
May 7. The Medicine of the Sun.
May 8. Tooth Troubles.
May 9. When Children are Bad.
May 10. Eyestrain and What to do About It.

Five minute health talks may be heard over the Columbia Broadcasting System daily from 1 to 1:05, daylight saving time.

The program for the week is as follows:

May 5. History Measures the Medical Milestones.
May 6. Utilizing Leisure for Health.
May 7. Old Sol as a Baby Doctor.
May 8. Dandruff — Dandruff Everywhere.
May 9. When You Plan Your Vacation.
May 10. Old Fashioned Stomach Ache.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

State Medical Election.—At the annual meeting of the Alabama State Medical Association, April 18, Dr. William G. Harrison, Birmingham, was chosen president. The convention will be held next year at Birmingham, April 21.

Practitioner Appointed State Health Officer.—Dr. James N. Baker, for thirty years a Montgomery practitioner, was appointed state health officer, succeeding the late Dr. Samuel W. Welch, April 18. The constitution of the state medical association requires that the state health officer shall have been a member of the college of councilors of the association for a period of five years.

ARKANSAS

Society News.—The annual meeting of the Arkansas Tuberculosis Association will be held at the Marion Hotel, Little Rock, May 5-6; among the speakers will be Dr. Theobald Smith, Princeton, N. J., on "Relation of Undulant Fever to Public Health."——The Benton County Medical Society was addressed at Rogers, recently, by Drs. R. Claude Lowdermilk, Galena, Kan., and Samuel A. Grantham, Joplin, Mo., on "Asthma" and "Bone Surgery," respectively.

State Medical Meeting at Fort Smith, May 6-8.—The fifty-fifth annual session of the Arkansas Medical Society will be held at Fort Smith, May 6-8, under the presidency of Dr. Thad Cothern, Jonesboro, and with headquarters in the Knights of Columbus Convention Hall. The guest speakers will be Drs. Morris Edward Davis, Chicago, "Late Toxemias of Pregnancy"; Lewis J. Moorman, Oklahoma City, "More Recent Therapeutic Measures Employed in the Treatment of Tuberculosis"; Robert F. Lischer, Mascoutah, Ill., "The Country Doctor of Yesterday and Today"; Edward H. Skinner, Kansas

City, Mo., "What Has Radium to Offer the Medical Profession and Why," and Ernest Sachs, St. Louis, "Spinal Cord Tumors and Other Focal Spinal Lesions." Many interesting papers will be delivered by Arkansas physicians. The Dewell Gann, Jr., silver cup will be awarded for the high score in golf.

FLORIDA

State Medical Meeting at Pensacola, May 6-7. — The fifty-seventh annual meeting of the Florida Medical Association will be held at Pensacola, May 6-7, with headquarters at the San Carlos Hotel. Dr. Henry C. Dozier, Ocala, will give the presidential address on "Medical Education of the Laity." The guest of honor will be Dr. Charles W. Duval, New Orleans, whose subject will be "Correlation of Urinary Findings and Renal Pathology in Experimental Streptococcal Nephritis." Papers to be delivered by Florida physicians are: "A Comparative Study of Prophylaxis and Therapy of the Acute Infections of Florida Children"; "Auricular Fibrillation"; "Laboratory Examination of Surgical Tissue"; "Insomnia"; "Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis"; "Spider Poisoning"; "Ophthalmoscopic Diagnosis as Pertains to General Medical and Surgical Conditions"; "Newer Methods in the Treatment of Neisserian Infection in the Female"; "Peroral Endoscopic Removal of Foreign Bodies"; "Acute Pancreatitis from a Diagnostic Standpoint: Report of Three Cases"; "Skin Grafting"; "Filariasis in Southern Florida"; "Review of Some Cases of Obstruction of the Bowel with Partial Study of Writer's Own Work"; "Free Tendon Grafts in the Fingers"; "Some Considerations of Blood Transfusion: Report of a Fatality"; "Sex and Symbolism in Religion"; "Rational X-Ray and Radium Therapy"; "Luetic Heart Disease, with Case Report"; "Further Observations on the Control of Subcutaneous and Mucous Membrane Hemorrhage by Splenic Irradiation with Radium"; "Two Aspects of Hypertension," and "Malaria Control." The entertainment will include a smoker, boat trips on Pensacola Bay, an automobile trip, luncheons, and the annual banquet. The golf tournament will be held at the Pensacola Country Club. The Florida Railway Surgeons' Association will hold its eleventh annual meeting, May 5.

ILLINOIS

Society News.—The Henry County Medical Society was addressed at Rock Island, May 1, by Drs. Clement L. Martin and Edwin W. Hirsch, Chicago, on "Proctology Problems of General Interest" and "Pathology: Diagnosis and Treatment of Prostatic Hypertrophy," respectively.——The annual meeting of the Mercer County Medical Society, Aledo, will be held at the Oak View Country Club, May 6; Dr. Lucius H. P. Zeuch, Chicago, will speak on "Pioneer Physicians and Shrines of Western Medicine," and Dr. Rollo K. Packard, Chicago, on "Medical Economics." —— An all day clinic was conducted, April 22, by the Decatur County Medical Society and the staff of the Decatur and Macon County Hospital; Dr. Francis E. Senear, Chicago, conducted a dermatologic clinic.

State Medical Meeting at Joliet, May 20-22. — The eightieth annual meeting of the Illinois State Medical Society will be held at Joliet, May 20-22, under the presidency of Dr. Frederick O. Fredrickson, Chicago. Drs. Logan Clendening, Kansas City, Mo., will speak on "Physical Diagnosis"; Louis H. Newburgh, Ann Arbor, "Nature of Obesity"; George V. I. Brown, Milwaukee, "Principles Which Render Present-Day Surgery of General Medical and Surgical Interest"; George J. Heuer, Cincinnati, "Surgery of the Hypophyseal Tumors"; Cecil S. O'Brien, Iowa City, "Treatment of Squint in Children"; Meyer Wiener, St. Louis, "Etiology and Treatment of Optic Neuritis"; Samuel G. Higgins, Milwaukee, "Hyperplastic Sinus Disease in Relation to Retrobulbar Neuritis"; William P. Wherry, Omaha, "Diagnosis and Treatment of Chronic Running Ear"; Arthur T. McCormack, Louisville, Ky., "Modern Rural Health Practice"; Isaac Gerber, Providence, R. I., "Some Remarks on Radiation Treatment of Toxic Goiter," and Otis W. Britt, Waterloo, Iowa, "Genito-Urinary Anomalies." The oration in surgery will be delivered by Dr. Dean D. Lewis, professor of surgery, Johns Hopkins University School of Medicine, Baltimore. Dr. Martin E. Rehfuss, Jefferson Medical College, Philadelphia, will deliver the oration in medicine on "Medicine of the Future—What Can We Expect." A symposium on obstetrics will feature the meeting, Wednesday afternoon. The annual presidents' dinner will be held Wednesday evening. The Will-Grundy Medical Society will be host to members at a stag, Tuesday evening. Dr. Olin West, Secretary and General Manager, American Medical Association, will talk at the secretaries' conference, Tuesday morning.

Chicago

Dr. Schlutz Comes to Chicago.—Dr. Frederic W. Schlutz, chairman of the pediatrics division of the University of Minnesota Medical School, Minneapolis, has been appointed head of the department of pediatrics at the University of Chicago's south side clinics. He will be director of the Bobs Roberts Memorial Hospital for Children, opened about May 1. Dr. Schlutz has been connected with the University of Minnesota for about twenty years.

Health Exposition.—A health and educational exposition will be held, May 17-25, at the Coliseum, under the auspices of the Illinois Federation of Women's Clubs, the Chicago Medical Society and the Chicago Dental Society. Feeding methods for infants and for children from 2 to 6 years old will be demonstrated. Public health nurses and physicians will show what means the board of education has adopted for the preservation of child health. There will be exhibits of water purification and mosquito control, and examination and care of the eyes, and dental hygiene. A play portraying the evil effects of smoke in the home will be given.

Program for National Hearing Week. — The Chicago League for the Hard of Hearing during National Hearing Week, beginning May 1, is holding open house, giving demonstrations of hearing aids. During the week, the board of otologists as well as members of the Chicago Laryngological and Otological Society will broadcast talks relative to the proper care of the ears, prevention of deafness and the league's work as carried on in the public schools with children. On May 10, a program will be given at Kimball Hall; among other features, a moving picture entitled "Hearing Examination and Conservation" will be presented by Dr. Austin A. Hayden. The Chicago League has undertaken the program of examining 530,000 children with the 4-A audiometer test which is used by 158 cities.

Woman's Club Sponsors Cancer Research.—The Chicago Woman's Club, in September, 1929, incorporated the Cancer Research Institute of Chicago to be conducted by a medical board of seven directors respresenting the four medical schools of Chicago, the Chicago Medical Society, the John McCormick Memorial for Infectious Diseases and the American Society for the Control of Cancer. Dr. Ludvig Hektoen is chairman. The club has requested its membership of 1,700 women to subscribe the sum of $30,000, the interest of which will place one medical worker in a field of research. The Cancer Research Institute also is raising an endowment for research, which will be raised chiefly by the sale of cancer seals.

Society News.—Dr. Walter G. Sexton, Marshfield, Wis., addressed the Chicago Urological Society, April 24, on "Differential Diagnosis of Renal and Biliary Calculus."——A symposium on septic sore throat featured a joint meeting of the Milk Commission and the Chicago Medical Society, April 30; Dr. Arnold H. Kegel, city health commissioner, presided; the speakers were Drs. David J. Davis and Isadore Pilot of the University of Illinois, Mrs. Hallman, T. B. Hadley and Prof. William D. Frost, Dr.P.H., of the University of Wisconsin.——The Chicago Medical Society will be addressed, May 14, by Dr. William A. Thomas on "My Trip North with MacMillan." —— Dr. George Dick will address the Chicago Laryngological and Otological Society, May 5, on "Focal Infections," and Drs. Joseph C. Beck, George E. Shambaugh and John Gordon Wilson will speak on "An Appreciation of the Importance of Dr. Billing's Theory of Focal Infections in Modern Otolaryngology"; Dr. Frank Billings will be the guest of honor.——The Chicago Society of Internal Medicine was addressed, April 28, by Dr. Merritt Paul Starr on "Recent Advances in the Treatment of Degenerative Liver Disease"; Dr. Fred M. Smith, Iowa City, "Reflex Gastric Pain."

INDIANA

Indiana Secretaries Fly to Chicago.—A group of four airplanes left Indianapolis at 6:30 a. m., April 23, laden with secretaries of county medical societies en route to the headquarters of the American Medical Association in Chicago, where they held their annual conference under the auspices of the Indiana State Medical Association. The planes landed at the Municipal Airport in about one hour and fifty minutes. The party returned by air the same afternoon. The program comprised talks by heads of departments of the American Medical Association, a luncheon, and a trip through the headquarters building. The Indiana State Medical Association had made arrangements to accommodate and provide for fifty in attendance at the conference; that number was exceeded by seventeen, the total, including guests, being sixty-seven. This was the third annual conference of county society secretaries

which has been conducted at the headquarters of the American Medical Association. The previous conferences held there were conducted by the State Medical Society of Wisconsin and the Michigan State Medical Society. Each secretary who came by airplane was allowed 30 pounds of baggage.

IOWA

State Medical Meeting at Marshalltown, May 14-16.—The seventy-ninth annual session of the Iowa State Medical Society will be held at Marshalltown, May 14-16, with headquarters at the Hotel Tallcorn, and under the presidency of Dr. John H. Peck, Des Moines. The address in medicine will be given by Dr. O. H. Perry Pepper, professor of clinical medicine, University of Pennsylvania School of Medicine, Philadelphia, on "The Internist's Responsibility for the Fruitless Laparotomy," and the address in surgery, by Dr. Temple Fay, professor of neurosurgery, Temple University School of Medicine, Philadelphia, on "Acute Cerebral Hydration States: Their Management by Dehydration with Especial Reference to Epilepsy and Cerebral Trauma." Other guest speakers will be Drs. George F. Suker, Chicago, and Herman M. Johnson, Dawson, Minn., who will speak on "Thyroid Dyscrasias in Relation to Eye Diseases" and "What Is the Matter with the Medical Profession," respectively. Dr. William Gerry Morgan, Washington, D. C., President Elect, American Medical Association, will speak on "Functional Diseases of the Alimentary Tract." Dry clinics and demonstrations will be held, Wednesday, by Drs. Royal F. French and Edwin Cobb, Marshalltown, Dr. Suker, and Dr. Dean M. Lierle, Iowa City. There will be a symposium on fractures, entertainment for wives of members; a smoker, May 14, and a banquet at Memorial Coliseum, Thursday. The State Society of Iowa Medical Women will hold its thirty-third annual meeting, May 13; the guest speaker will be Dr. Olga F. Stastny, Omaha.

KANSAS

State Medical Meeting at Topeka, May 6-8.—The seventy-second annual meeting of the Kansas Medical Society will be held at Topeka, May 6-8, under the presidency of Dr. Erastus S. Edgerton, Wichita, and with headquarters at the Hotel Jayhawk. The guest speakers will be Drs. John R. Nilsson, Omaha, on "Fractures"; Walter E. Dandy, Baltimore, "Diagnosis and Treatment of Lesions of the Cranial Nerves"; Allen B. Kanavel, Chicago, "Repair of Injuries of Hand"; Morris Fishbein, Chicago, editor of THE JOURNAL, "Medical Ethics," and Joseph Colt Bloodgood, Baltimore, "Problems of Cancer." Other speakers will be Drs. Leon W. Shannon, Hiawatha, "Treatment and Management of Tetanus"; Will K. Johnson, Garnett, "The County Health Officer"; Ralph I. Canuteson, Lawrence, "Impressions of Student Health Services"; Louis O. Nordstrom, Salina, "Gastric and Duodenal Ulcer"; Lewis D. Johnson, Chanute, "Stasis of Cecum and Ascending Colon"; Roy D. Russell, Dodge City, "Acute Intestinal Obstruction"; Elmer E. Morrison, Great Bend, "Diagnosis of Acute Osteomyelitis"; William C. Menninger, Topeka, "Mental Disturbances Associated with Puerperium"; Claude C. Tucker, Wichita, "Hemorrhoid Operation Under Local Anesthetic"; Elvenor A. Ernest, Topeka, "Present Status of Women in Medicine"; Andrew Allen Olson, Wichita, "Treatment of Bronchial Asthma"; Benjamin P. Smith, Neodesha, "Diabetes"; Milton B. Miller, Topeka, "Tuberculosis of Mesenteric Lymph Glands"; Lewis G. Allen, Kansas City, "Radiation Treatment of Nonmalignant Lesions of the Female Pelvis"; La Verne B. Spake, Kansas City, "Peritonsillar Infections"; L. A. Calkins, Rosedale, "Blood Sedimentation Test in Obstetrics and Gynecology"; William F. Schroeder, Newton, "Hip Joint Disease," and Lerton V. Dawson, Ottawa, "Surgical Female Abdomen." A public meeting will be held, May 7, which will be addressed by Dr. Fishbein on "Quackery."

LOUISIANA

Health at New Orleans.—Telegraphic reports to the U. S. Department of Commerce from sixty-five cities with a total population of 30 million, for the week ended April 12, indicate that the highest mortality rate (22) was for New Orleans and that the mortality rate for the group of cities as a whole was 14.2. The mortality rate for New Orleans for the corresponding period last year was 16.4, and for the group of cities, 13.4. The annual rate for sixty-five cities for the fifteen weeks of 1930 was 13.9, as against a rate of 15.9 for the corresponding weeks of 1929. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large negro population may tend to increase the death rate.

MARYLAND

State Medical Election.—At the annual meeting of the Medical and Chirurgical Faculty of Maryland, recently, Dr. James M. H. Rowland, dean and professor of obstetrics, University of Maryland School of Medicine, Baltimore, was elected president; Drs. William D. Campbell, Hagerstown, Henry M. Lankford, Princess Anne, and Charles W. Maxson, Baltimore, vice presidents, and Drs. Charles E. Brack, Baltimore, and John T. King, Jr., Baltimore, reelected treasurer and secretary, respectively.

Personal.—Dr. Frederick H. Baetjer, professor of clinical roentgenology, Johns Hopkins University School of Medicine, Baltimore, entered Johns Hopkins Hospital, March 18, to undergo his fifty-second operation necessitated by injuries from exposure to x-rays.——Dr. Ralph G. Beachley has been appointed full-time health officer for Kent County, with headquarters at Chestertown, effective June 1.——The appointment of Mr. C. A. Perry as chief of the bureau of bacteriology of the state department of health and director of the state bacteriologic laboratories has been announced.

Society News.—Dr. Charles H. Frazier, Philadelphia, April 4, addressed the Baltimore City Medical Society on the present status of the pituitary problem.——The twelfth annual conference of health officers and boards of health of Maryland will be held, May 9-10, in Baltimore. The program includes papers by Richard C. Leonard, D.D.S., on "Oral Hygiene Program for Maryland"; Dr. Milford E. Barnes, Iowa City, Iowa, "Benefits of a Full-Time County Health Department"; Dr. William H. Park, New York, "Control of Diphtheria," and Dr. Edwards A. Park, Baltimore, "Primary Infections of the Infant with Tuberculosis."

Another Gift to Johns Hopkins.—The General Education Board of New York has given $500,000 to the Johns Hopkins Hospital and School of Medicine to be used for the completion of the William Osler Medical Clinic and the William Stewart Halstead Surgical Clinic, it was announced April 21. This gift raises the total given by the board toward the completion of these buildings to $1,750,000. These two buildings when finished will add 165 beds to the hospital, the great majority of which will be free, with facilities for both white and negro patients, men, women and children. The highest charge to be made for any bed in the building will be $3 a day. An anonymous gift was given a year ago for the endowment of the additional beds which the new buildings will provide. It is expected that the Osler clinic will be ready for occupancy in December. When it is completed, work will be begun on the Halstead clinic.

MASSACHUSETTS

Nonagenarians Still in Practice.—A survey by the New England Medical Center Fund reveals that New England has at least six physicians who have passed the age of 90 and are still in practice: Drs. Francis Wayland Adams, Royalston; George W. Gale, East Saugus; Merritt H. Eddy, Middlebury, Vt.; Chester M. Ferrin, Burlington, Vt.; Abner O. Shaw, Portland, Maine, and Ara M. Paine, Woonsocket, R. I. New England has eighty-seven physicians ranging from 71 to 97 years of age, two of whom are women.

Society News.—The Boston Medical History Club was addressed, April 21, by Dr. Charles F. Painter on "Interrelations of Anatomy and Surgery," and by Mr. Alfred Ela on "Indigenous Materia Medica of Various Races."——Dr. William P. Boardman, Boston, addressed the South End Neighborhood Medical Club, April 22, on "Skin Lesions in Systemic Diseases."——"The Tuberculosis Situation in Hampden County" was the subject of Dr. George H. Bigelow, state commissioner of health, Boston, before the Hampden District Medical Society at Springfield, April 29.

MISSOURI

Dr. Kieffer Honored.—A bronze plaque was presented to the St. Louis Medical Society, April 22, by friends of Dr. Alonzo R. Kieffer, in celebration of his fiftieth year in the practice of medicine. Dr. Kieffer was treasurer of the society for eight years, president in 1903, and president of the state society in 1908. The weekly *Bulletin* of the St. Louis Medical Society says that Dr. Kieffer is indirectly responsible for its permanent home.

Society News.—The Jackson County Medical Society was addressed, April 29, by Dr. Clinton K. Smith, Kansas City, on "Seminal Vesicle Disease," and by Dr. Arthur Lloyd Stockwell, Kansas City, "Erysipelas in Infancy and Childhood." The society was addressed, April 22, by Drs. Richard L. Sutton and Richard Sutton, Jr., on "The Long Trek: the Story of

an African-Asiatic Expedition."——The Kansas City Academy of Medicine was addressed, April 25, by Dr. W. F. Rienhoff, Baltimore, on "Interrelationship of Diseases of the Thyroid Gland."

Appointments at Washington University.—The following appointments have been recently announced by Washington University School of Medicine, St. Louis:

George H. Bishop, Ph.D., now associate professor of physiology in the school of medicine, professor of applied physiology.

Louis A. Julianelle, Ph.D., of the Rockefeller Institute for Medical Research, associate professor of applied bacteriology and immunology.

James A. Hawkins, Ph.D., of the Rockefeller Institute, associate professor of applied biochemistry.

R. Wendell Harrison of the University of Chicago, instructor in applied bacteriology and immunology.

Garvey Bowers of the University of Kansas, research assistant in applied bacteriology.

NEW JERSEY

Hospital News.—The report of the Orange Memorial Hospital at Orange shows a total of 1,008 births during the last fiscal year, which places that institution third in the total number of births in New Jersey hospitals for that period.

Bill Enacted.—H. B. 85, providing that after Jan. 1, 1934, an applicant for a license to practice chiropody, in addition to being a graduate of a reputable college of chiropody, must have served an internship of one full year in a duly licensed clinic, connected or affiliated with a college of chiropody, has become a law.

NEW YORK

Society News.—The New York State Association of Public Health Laboratories will hold its fourteenth annual meeting at the School of Medicine and Dentistry, University of Rochester, June 2.——Dr. Charles W. Webb, Jr., Clifton Springs, recently addressed the Ontario County Medical Society on goiter, and Dr. Albert M. Crance, Geneva, on "When Is Abdominal Pain an Indication for Complete Urologic Study?"

New York City

Research Fellowship in Orthopedics.—The fellowship committee of the Hospital for Joint Diseases of New York has announced a fellowship with an award of $2,400 a year and maintenance which was established by Mr. and Mrs. Frederick Brown. The fellow may select his own research problem or accept one designated by the committee. Fellows are expected to devote their entire time to research. This hospital has a capacity for 351 beds for acute diseases. About 5,000 patients are treated annually and about one half are orthopedic. The outpatient department treats about 800 patients a day. The laboratories are well equipped for research and have a full-time staff.

Establishing Health Centers.—In the Statistical Reference Handbook, prepared by the committee on neighborhood health development in connection with the survey of thirty health districts of the city, statistics are given to show the present distribution and trend of population. The report gives the city an estimated population of 6,142,189 for 1929, and shows that on a school basis estimate, the borough of Manhattan had a decrease of 349,319 in population in 1929 over 1925. There were 12,205 new cases of tuberculosis found in 1929, of which Manhattan had 5,016. An appropriation of $1,500,000 was recommended by the department of health for the erection of four health centers and the purchase of six sites this year. Each center will cost approximately $250,000 to build, and the cost of maintenance is estimated at $6,500 a year. There will be a baby health station, a visiting nurse service, a diagnostic chest station, and prenatal and maternity, nutritional and other services, all to be placed at the disposal of the private physician and his patients.

Society News.—The Harlem Medical Association was addressed, April 22, by Dr. Dean Lewis, Baltimore, on "Surgical Diseases of the Breast."——The New York Surgical Society was addressed, April 23, by Dr. Morris K. Smith on "Surgical Treatment of Urinary Incontinence in Women" with report of a case.——The committee on the health of school children of the Medical Society of the County of New York presented the program before the New York Academy of Medicine, May 1; the speakers were Drs. Samuel McC. Hamill and Shirley W. Wynne.——A symposium on tuberculosis was conducted before the April 30 meeting of the Greater New York Public Health Officers' Association; the speakers were Drs. James Alexander Miller, Bela Schick and William H. Park.——The Medical Society of the County of New York was addressed, April 28, by Dr. Walter M. Simpson, Dayton, Ohio, on tularemia; the society will be addressed, May 26, by Harry H. Moore, Washington, D. C., on "The High Cost of Illness."——The annual meeting of the American Stomatological Association will be held, May 6, at the Columbia University Club. Walter H. Eddy, Ph.D., will speak on "Dietary Factors Concerned in the Building and Maintenance of Teeth"; those discussing the paper will be Henry C. Sherman, Ph.D., from the point of view of the biochemist; Dr. Roger H. Dennett from the point of view of the clinical pediatrician and Harold J. Leonard, D.D.S., from the point of view of preventive dentistry and dental research.——The New York City Physicians' Golfing Association held its annual meeting and first tournament of the season at the Inwood Country Club, April 22; the guest's prize was won by Dr. Hallie M. Ratliff. Prizes were won by Drs. Lawrence D. Alexander, Roy L. Blackmon, A. B. Johnson, Edgar M. Pope, James M. Smith, Martin L. Sowers and Arthur S. Wilson.

PENNSYLVANIA

Society News.—Dr. Clifford G. Grulee, Chicago, addressed the Pittsburgh Pediatric Society, April 26, on "Intraperitoneal Therapy in Infants and Children."——Dr. Henry A. Gorman addressed the Northampton County Medical Society, April 18, on tuberculosis, and Dr. Stephen E. Murray, Easton, psittacosis. ——The new Quakertown Community Hospital was formally opened, March 31; the chief of staff is Dr. Wilson S. Erdman. ——Dr. George J. Wright, Pittsburgh, conducted a neurologic clinic before the Fayette County Medical Society, Uniontown, May 1.

Philadelphia

License Revoked.—The state board of medical education and licensure at a meeting in Harrisburg, April 23, revoked the license to practice medicine of Dr. Harvey M. Griggs; he was recently found guilty in the Philadelphia courts of having committed criminal abortion on two counts. Dr. Griggs was sentenced, January 14, to a term of from five to ten years in the county prison (THE JOURNAL, February 1, p. 347).

Dr. de Schweinitz Awarded Medal.—Dr. George E. de Schweinitz, professor of ophthalmology in the University of Pennsylvania Graduate School of Medicine, has been awarded the Leslie Dana Medal for prevention of blindness for 1930. The medal has been given each year since 1925 to the person who performs outstanding work in the prevention of blindness and the conservation of vision. The St. Louis Society for the Blind is trustee for the medal fund. In 1927, Dr. de Schweinitz won the Howe prize medal in ophthalmology.

Society News.—"Present-Day Conception of Mental Disorders" will be the subject of Sir Maurice Craig, London, at a dinner of foreign delegates to the First International Congress on Mental Hygiene, May 3, at Philadelphia.——A joint meeting of the Philadelphia County Medical Society and the Philadelphia Pediatric Society will be addressed, May 14, by Dr. Arthur H. London, Jr., on "Experience with Transfusion in Infancy and Childhood," illustrated, and by Dr. Joseph D. Aronson on "The Present Status of Immunization against Tuberculosis with B C G."——Dr. Wilbur H. Haines spoke on "Pseudohermaphrodism" before the April 28 meeting of the Philadelphia Urological Society, and Dr. Sigmund S. Greenbaum, "Concerning the Curability of Syphilis as Based on Lymph Node Transfers."——"Interesting Phases of State Legislation" was the subject of Philip Sterling, member of the Pennsylvania State Legislature, before the Medico-Legal Society of Philadelphia, April 29.——Drs. Leopold Goldstein and David H. Wenrich, Ph.D., presented a moving picture demonstration of "Trichomonas Vaginalis Vaginitis in Pregnancy" before the Obstetrical Society of Philadelphia, and Dr. Leonard C. Hamblock spoke on "Inversion of the Uterus."—— Among others, Dr. Garrett R. Miller addressed the Philadelphia Roentgen Ray Society, May 1, on "Recognition of Intrapulmonary and Tracheobronchial Calcifications."

RHODE ISLAND

Bill Enacted.—H. B. 532, exempting practicing pharmacists from jury service, has become a law.

TEXAS

State Medical Meeting at Mineral Wells, May 6-8.—The sixty-fourth annual session of the State Medical Association of Texas will be held, May 6-8, at Mineral Wells, under the presidency of Dr. Don J. Jenkins, Daingerfield, and with headquarters at the Baker Hotel. A series of health lectures will be delivered from the pulpits of local churches. The Texas State Medical Golfers' Association will hold its tournament at the Mineral Wells Country Club; the Hotel Paso del Norte cup will be awarded for the low gross score and the

Orndorff Hotel cup for the low net score. There will be a barbecue, luncheons and alumni banquets. The guest speakers are Drs. Bernard H. Nichols, Cleveland, on "Tuberculosis of the Kidney"; Allan C. Eustis, New Orleans, "Diagnosis and Treatment of Liver Dysfunction"; Alfred W. Adson, Rochester, Minn., "Value of Sympathetic Ganglionectomy and Trunk Resection in Treatment of Raynaud's Disease, Thrombo-Angiitis Obliterans, Scleroderma and Arthritis," illustrated; Harry W. Woodruff, Joliet, Ill., "Operative Treatment of Strabismus"; Ramon Castroviejo, Chicago, "Pathology of Glaucoma," illustrated; Ignatius Sommer, Chicago, "Herpes Zoster Ophthalmicus in Its Relation to Sympathetic Ophthalmia and the Inner Ear"; Thomas E. Carmody, Denver, "The Sinus Problem"; Benjamin T. Terry, Rochester, Minn., "Rapid Diagnosis of Malignant Tumors"; James W. Kennedy, Philadelphia, "Vaginal Hysterectomy and Its Relation to Pathologic Conditions of the Uterus"; Mr. Homer N. Calver, executive secretary, American Public Health Association, New York, "Gnats and Camels in Public Health"; William J. Bell, Toronto, Canada, "The State's Relation to the Practice of Medicine"; Ralph C. Williams, U. S. Public Health Service, Washington, D. C., "Morbidity and Vital Statistics in Relation to the Public Health"; Seale Harris, Birmingham, Ala., "Cure of the Ulcer Patient"; P. Brooke Bland, Philadelphia, "Some Factors Concerned in the Prevention of Cervical Carcinoma." Among the other organizations meeting at this time are the Texas Radiological Society, the Texas Neurological Society and the Texas Dermatological Society.

GENERAL

Date of Meeting Changed.—The dates of the Second International Pediatric Congress, to be held in Stockholm, have been changed to August 18-21. Communications should be addressed to the Second International Pediatric Congress, Stockholm, Sweden.

Detroit "Physician" Again "Practicing."—Information regarding Carl H. Elfes, alias Maximilian R. Schneller, has previously appeared in the columns of THE JOURNAL (Sept. 17, 1927, p. 974). Apparently he has completed his prison sentence in Minnesota and resumed his previous type of activities with a plausible "hard luck" story and the use of a Detroit physician's name. He obtained on credit merchandise from two department stores of Detroit and disappeared for parts unknown. Elfes was arrested in Detroit, Aug. 12, 1927, and returned to Minnesota, where he had previously been sentenced for five years for writing fraudulent checks.

Another Foundation Established.—The Josiah Macy, Jr., Foundation for preventing and curing disease and relieving human suffering has been established through a gift of $5,000,000 by Mrs. Walter Graeme Ladd of Bar Hills, N. J. The foundation, which is a memorial to Mrs. Ladd's father, was incorporated, April 23, in Albany, N. Y. This new organization, it is said, will have no hospitals or laboratories of its own, but will cooperate with existing social agencies and will support universities, hospitals and laboratories already in use. Definite plans have not been formulated, but it is expected that a report will be submitted at the next meeting in October. It is understood the foundation will not limit its work to any particular field but will probably lean most strongly toward the development of methods to relieve the suffering of the mentally disordered.

American Association for the Study of Goiter.—This association will meet in Seattle, July 10-11 and July 12, at Tacoma and Mount Rainier. Drs. Elmer R. Arn, Dayton, Ohio, the president, will speak on "Auricular Fibrillation Associated with Hyperthyroidism"; Willard Bartlett, Jr., St. Louis, "Tumors of the Neck Simulating Goiter"; Harold Brunn, San Francisco, "Why General Anesthesia Should Not Be Used in Thyroid Surgery"; Gordon S. Fahrni, Winnipeg, "Effects of Thyroidectomy on Pregnancy"; Lewis M. Hurxthal, Boston, "Cardiovascular System in Goiter"; William J. Kerr, San Francisco, "Necrosis of the Heart and Liver in Thyrotoxicosis"; Oliver P. Kimball, Cleveland, "Relation of Endemic Goiter to Mental Efficiency"; Robertson Ward, San Francisco, "Carcinoma of the Thyroid," and Ralph R. Wilson, Kansas City, "Effects of Thyroid Activity on the Female Organism."

Bequests and Donations.—The following bequests and donations have recently been announced:

Children's Orthopedic Hospital, Seattle, $3,000 by the will of the late Dr. Roy C. Baumgarten.

Home for Destitute Crippled Children, Chicago, $5,000, and Wesley Memorial Hospital, Chicago, $5,000 by the will of the late Miss Grace Dixon.

Brooklyn Eye and Ear Hospital, New York, $25,000, and American Society for the Control of Cancer, $50,000 by the will of the late William H. Nichols.

Lankenau Hospital, Philadelphia, $10,000 by the will of Mrs. Augusta Deitz.

Bronson Hospital, Kalamazoo, Mich., $14,000 by the will of the late Henry S. Tolhurst.

Massachusetts College of Pharmacy, $1,000,000, and the Boston Lying-In Hospital, $200,000 by the will of the late Mrs. Harriet J. Bradbury.

Holy Family, St. Catherine's and St. Peter's hospitals, all of Brooklyn, each $5,000 by the will of the late Mr. Joseph M. Moran, New York.

St. Vincent's and St. Joseph's hospitals, New York, each $50,000 by the will of the late Mr. John B. Manning, New Rochelle, N. Y.

Michael Reese Hospital, Chicago, $10,000 from friends of the late Dr. Louis A. Greensfelder for endowing the Louis A. Greensfelder Lectureship Fund.

Vermilion, S. D., Hospital, $30,000 from Mrs. M. D. Thompson and her son in memory of the late Mr. Thompson.

Marshall Lodge Memorial Hospital, $50,000, and the Virginia Baptist Hospital, Lynchburg, $25,000, for maintenance of a memorial room, and $5,000 besides for the benefit of crippled children by the will of Mrs. Catherine Mundy, Lynchburg, Va.

Soldiers and Sailors' Memorial Hospital, Penn Yan, N. Y., $100,000 by Mr. William N. Wise, Penn Yan; the gift is in the form of a trust fund.

Flower Hospital and New York Homeopathic Medical College, $50,000 at once and $50,000 on the death of his widow, and New York Ophthalmic Hospital, $250,000 at once and $50,000 on his widow's death, by will of the late Dr. John Edward Lounsbury Davis.

Medical Bills in Congress.—H. J. Res. 222, providing for the appointment of a joint Congressional committee to survey and investigate the pay, allowances, pensions, compensations, emoluments and retired pay of all persons, except those in the regular establishments, who served in the military and naval forces of the United States in any war, has passed the House. H. R. 6338, authorizing the erection of a sanitary fireproof hospital at the National Home for Disabled Volunteer Soldiers at Togus, Maine, has been reported to the Senate, without amendment (Report 484). H. R. 7410, authorizing the establishment of a hospital for defective delinquents, has been reported to the Senate, without amendment (Report 535). H. R. 9235, authorizing the Public Health Service to provide medical service in the federal prisons, has been reported to the Senate, without amendment (Report 538). H. R. 10381, amending the World War Veterans' Act, has passed the House, with amendments. As amended, the bill provides that if an ex-service man has prior to Jan. 1, 1930, "a disability developing a 10 per cent degree or more," he shall be presumed to have acquired his disability in service and will be entitled to compensation and hospitalization at government expense, and, further, that such presumption shall be conclusive in cases of tuberculosis, paralysis, paresis, blindness, those permanently helpless or permanently bedridden, spinal meningitis, neuropsychiatric disease, paralysis agitans, epidemic encephalitis, "a chronic constitutional disease or analogous disease," and amebic dysentery. H. R. 10865, authorizing Dr. William S. Thayer and Dr. William H. Welch to accept the awards of the Legion of Honor, has been signed by the president (Private Law 21). S. 3425, authorizing an additional appropriation of $125,000 to erect a children's tuberculosis sanatorium for the District of Columbia, has been signed by the President (Public Law 144).

Government Services

Change of Station in the Navy

Lieut. Carroll P. Hungate's resignation has been accepted, effective September 12. Capt. Ammen Farenholt has been assigned to duty as inspector of medical department activities, bureau of medicine and surgery, effective about May 1. Lieut. James C. Kimball from the navy hospital, Norfolk, Va., about May 31, to the navy yard at Norfolk; Lieut. Comdr. Carleton I. Wood from the U. S. S. *Melville*, about May 11, to the navy hospital, Boston; Lieut. Clarence N. Smith from the fifth regiment, U. S. Marines, Nicaragua, to the navy yard, Boston.

Examination for Medical Officer

An examination for associate medical officer (pathology) is announced by the U. S. Civil Service Commission. Applications will be rated as received by the commission in Washington, D. C., until June 30. Vacancies are in the U. S. Public Health Service at Ellis Island, N. Y., and in Detroit. Entrance salaries range from $3,200 to $3,700 a year. Applicants must have been graduated with the degree of M.D. from a medical school of recognized standing, and, in addition, must have had at least two years of specialized study or practice in human pathology. Full information may be obtained from the U. S. Civil Service Commission, Washington, D. C., or the secretary of the U. S. Civil Service Board of Examiners at the postoffice or customhouse in any city.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 12, 1930

Carcinogenic Substances in Oils and Tar

In a previous letter, information on carcinogenic substances in lubricating oils, obtained by the Manchester Committee on Cancer, was given. A further report, for the year ended Oct. 31, 1929, has just been published. Tars have been prepared at temperatures of 500, 600, 750, 850 and 950 C. in order to ascertain at what temperatures carcinogenic compounds are formed in commercial tar and shale retorts. The relative activity of tars so obtained was 0, 12, 24, 100 and 64, from which it appears that carcinogenic compounds begin to be synthesized between 500 and 600 C. and that the maximum yield is between 800 and 900 C. Investigations on the concentration of the active principle in synthetic tar have been continued, and tars have been prepared at least 100 times as potent as shale oil. A few compounds that are apparently pure or almost pure have been isolated from these tars, and attempts are being made to determine their chemical composition. The effect of increasing the frequency of the applications of suspected agents has been investigated. When the number of weekly applications was increased from the former standard of two to five, tumors appeared more quickly and their incidence rose considerably, the rise being greater the weaker the agent under investigation. The carcinogenic potency of shale oil was increased approximately fourfold and of natural petroleum oils about fiftyfold by increasing the number of applications each week from two to five. These results led to the conclusion that natural petroleum oils have a carcinogenic activity nearer to that of shale oil than was previously imagined. The procedure previously adopted for the detoxication of oils by means of sulphuric acid required a large amount of acid. An attempt is being made to ascertain the minimal amount of acid that will render an oil harmless. It has been found that olive oil, neatsfoot oil and sperm oil do not produce cancer. This is in keeping with the results obtained by various workers with other animal and vegetable oils. The natural skin fat is an important factor in the prevention of experimental cancer. If hydrous wool fat (a natural animal fat) is applied to the skin in the interval between synthetic tar applications, the development of tumors is delayed. In the case of shale oil, hydrous wool fat gave almost absolute protection when applied at least twice as frequently as shale oil. With alternate applications of shale oil, the protection is much less. The committee does not consider that it is in a position to give an opinion on proprietary brands of lubricating oils. The reports of the committee and the papers published by its research workers (C. C. Twort, pathologist; J. D. Fulton, chemist; J. M. Twort, zoologist, and C. Powel White, histologist) have received wide notice in journals and in commercial circles, as marking a distinct advance in the problem of the causation and prevention of cancer. Two of the largest oil producing companies in the world have recognized the importance of the attempt to find a safe lubricating oil and have sent their medical and scientific directors to see the work.

Tetra-Ethyl Lead in Motor Spirit

The interim report of the committee appointed by the minister of health to inquire into the possible dangers to health from the use of motor spirit containing tetra-ethyl lead was summarized in THE JOURNAL, Sept. 1, 1928, p. 655. The final report, just published, confirms the previous report—that there are no reasons for prohibiting the use of ethyl gasoline so long as adequate precautions are observed. Evidence was taken not only from British but also from American chemists, including among the latter Dr. Kehoe, who was responsible for much of the work done in the United States by the Ethyl Gasoline Corporation. The results of the investigation performed under the supervision of the U. S. Public Health Service were examined in preparing the previous report. But further inquiry was considered desirable, particularly with regard to the effect of inhaling ethyl vapor when spilling occurred in garages. The committee found that the quantities of particulate lead in the atmosphere would not be sufficient to endanger the health of drivers or policemen on duty. The ordinary dweller in London inhales about 0.1 mg. of lead daily: the lead inhaled by those most exposed would not exceed twice that and would be negligible as a source of danger. The risk from exhaust gases and spillages in a well ventilated garage is equally minute. Even constant exposure of the skin to ethyl gasoline is without danger, for no ill effects were produced in shaved rabbits after constant application for four months. Experimental work in the United States has revealed minute quantities of lead in normal urine. As the committee was not satisfied that the method of detection was sufficiently accurate, it adopted a new and more refined one, but this only confirmed the American conclusion. The average amount of lead found in normal urine was 0.04 mg. per liter. The source is inhalation of dust containing lead. The committee makes the following recommendations: 1. Cans and pumps should be labeled to indicate the presence of lead in the fuel and to warn the user to avoid spilling and not to use the fluid for purposes other than motor fuel. 2. The fuel should be dyed as an additional check against its use otherwise than as motor fuel. 3. The amount of tetra-ethyl lead in the fluid sold for ordinary commercial purposes should not exceed 1 part in 1,300 parts by volume or 1 in 650 by weight.

Alarming Increase of Claims on the Health Insurance Fund

The evils of the socialistic character of national health insurance, previously pointed out, are again shown by the disquieting statement of Sir Walter Kinnear, controller of the insurance department of the ministry of health, at the annual conference of the faculty of insurance. The government actuary, Sir Alfred Watson, has recently investigated the claims experience of a representative group of half a million insured persons for the years 1921-1927. Comparing 1927 with 1921, he found that the claims of men for sickness benefit had risen by 41 per cent, those of unmarried women by 41 per cent, and those of married women by 100 per cent. For disablement benefit the increases were, respectively, 85, 100 and 159 per cent. Up to the end of 1923 the claims of all classes were well within the actuarial provision made for them. In 1924 a sharp rise occurred, and then until 1925 the increase was steady. The average duration of claims for sickness benefit had not varied materially, but there had been a striking and steady growth in the number of claimants. In 1921, fourteen out of every hundred men claimed sickness benefit; in 1927 the percentage had grown to 23. In 1927, 430 out of every thousand married women had drawn sickness or disablement benefit. It is difficult to believe that, with all the efforts made to improve the health of the community, the cases of real sickness had increased by from 60 to 100 per cent in six years. A habit of making unnecessary claims seems to be growing. Worse still, it is impossible to say that the peak has been reached. During the war and the years immediately following, the claims experience was satisfactory. This seems to have been due to abundance of employment at high wages and a patriotic desire to contribute to the national effort. Obviously the prolonged industrial depression must be a factor in the increase of claims. But it has been out of all proportion to the increase in the burden of unemployment. The disconcerting increase of the claims of women, especially of married women, points to the operation of economic factors, such as the relation of sickness benefit to

wages, the family responsibilities of the individual, and the fear of subsequent unemployment in cases in which the incapacity was prolonged. A further investigation is to be made to acquire a more precise knowledge of the standard applied by different physicians in interpreting the phrase "incapable of work." It is noteworthy that in 1927 about two thirds of the persons who passed from sickness benefit to the lower rate of disablement benefit recovered their capacity for work soon after the rate of benefit was reduced.

PARIS

(From Our Regular Correspondent)

March 26, 1930.

Psittacosis in Paris

Several grave cases of psittacosis having developed in Paris and in the environs, the prefect of police has issued an order prohibiting in the department of the Seine the sale of parrots on the streets or markets or in the bird stores. Every bird presented under these conditions will be confiscated, placed under observation at the center for abandoned animals, and destroyed if sick. At the Institut Pasteur, a case of infection developed in a laboratory in which psittacosis was being studied, as a consequence of which the whole lot of parrots but recently received had to be destroyed. No deaths, however, have been reported as yet. Nevertheless the owners of parrots which have been kept for a long time in homes and which, owing to their isolation, are menaced by no contamination are seized with fear and are beginning to sacrifice their pets.

Increase in Tuberculosis Sanatoriums

At the meeting of the executive committee of the Ligue nationale de défense contre la tuberculose, under the chairmanship of Professor Bernard, Dr. Arnaud, the director, recounted the activities of the committee during the past year and called attention to the continuous development of departmental antituberculosis societies since 1918. There were, at that time, only nine sanatoriums for tuberculosis patients, with 4,183 beds; today there are ninety-six sanatoriums, with 9,558 beds. In 1918 there were no sanatorium-hospitals, while on Jan. 1, 1930, there were sixteen, with more than 3,000 beds. In the hospital isolation services there were in 1918 only a few hundred beds; today there are 6,000 beds. At present there are 25,000 beds for children, found in preventoriums, maritime sanatoriums and heliotherapeutic establishments, which makes a total of 44,667 beds, as compared with 6,138 in 1918. Dr. Arnaud called attention likewise to the progress made by the publicity department, and, more particularly, to the magnificent results attained by the sale of antituberculosis seals, which in 1928 produced 16,500,000 francs net and which will this year certainly exceed twenty million francs ($800,000).

Noisy Demonstrations by Medical Students

In Paris, the students have not yet ceased their agitation, begun two months ago, to prevent Mr. Blanchetière, professor of chemistry, from delivering his lectures. They reproach him with too great severity in his examinations for a science that they regard as quite secondary in their medical studies. On several occasions, by their boos and noisy demonstrations in the classroom, they have compelled him to retire, in spite of the fact that he was supported by the presence of the dean of the Faculté de médecine, Professor Roger. They have also broken tables and window panes. There have been some rows in which the police had to intervene. The dean ordered the course to be suspended for a week and threatened, if the troubles began again, to discontinue it for six months, which would cause all the students of this class to lose six months of study; that is to say, they would obtain their final diploma six months later than otherwise. The students thereupon adopted other tactics. They no longer entered the amphitheater, but they formed a cordon that prevented any one else from entering. The professor was obliged to retire at the end of twenty minutes, as no students arrived. The minister was then requested by the dean to declare the course closed until the reopening of the university in October.

At Marseilles, further demonstrations of students took place to protest against the parliament's delay in voting funds for transforming the school of medicine into a faculty of medicine. This transformation was decided on in spite of the opposition of the Faculté de Montpellier near by, which will suffer from the competition. There is considerable delay, and this agitation is not exactly displeasing to the professors themselves of the Ecole de Marseille, whose salaries will be increased when their school is raised to the rank of a faculty of medicine. The demonstrations occurred on the streets, with the complicity of the population of Marseilles. The trouble makers formed a column and marched to the city hall, where the mayor, Mr. Flassières, could only promise them to try to speed up the action of the central government, which, however, will not be possible until after parliament has voted on the budget.

Politics and Public Urinals in Paris

In the last few years, an increasing number of public urinals in Paris have been abolished, and the prefecture of police does not see to having them replaced. These urinals are, it must be admitted, unsightly objects, seldom clean, and they take up space on the sidewalks, where, owing to the automobile traffic, pedestrians are compelled to congregate. It is the understanding that they are gradually to be replaced by subterranean comfort stations. The city administration does not appear, however, to be in a hurry. Those that exist are clean, but they are closed at night so as not to serve as hangouts for strollers. The result has been that the number of public urinals in Paris has diminished by nearly one half in the last ten years, while the population has increased. This situation has attracted the attention of the urologists, several of whom have published protests in the daily press, in which they assert that the suppression of desire to urinate is, in man, an important factor in the causation of prostatic hypertrophy, a disease that has increased in recent years, as can be observed in civil practice and also among the hospital clientele. The worst feature is that it is suspected that the municipal council, whose services are responsible for this strange suppression of comfort stations, is complying secretly with the wishes of owners of drink parlors; for, if no urinal is at hand, a man enters one of these drinking places and, on paying the price of a drink, makes use of the private urinal, frequently having to pay a small sum for the privilege. The owners of these drinking places control a large number of votes. They have already brought about the suppression of most of the drinking fountains by affecting to be actuated by hygienic considerations; that is to say, they exaggerate the danger of contagion associated with the metal drinking cups attached to these fountains. The schemes resorted to for the purpose of creating more business are many and devious; but no one had imagined that, in an indirect way, one of the outcomes of such intriguing would be an increase in the number of cases of prostatic hypertrophy.

Dispensary for Actinotherapy

The commune of Vitry-sur-Seine, near Paris, has a dispensary for children, which has recently been provided with modern equipment for treatment by ultraviolet rays. Such equipment is commonly found only in certain private and expensive institutes. The floor has a layer of fine sand four inches thick, and the walls are covered with a metal paint such as is used to give to radiators a silvery tint. The room will accommodate twelve children at a time. Their bodies are naked and the eyes are protected by special glasses or a mask of mica. Eight lamps located in the ceiling produce the ultraviolet rays, and four others furnish the infra-red rays, the

lamps being arranged so as to get a good mixture of various rays. The heating of the room is accomplished by means of two electrical radiators equipped with pipes that carry out, by means of aspiration, the ozone produced, which would finally vitiate the atmosphere. Each child receives a treatment every two days. The treatments vary in length from one minute to eighteen minutes. A course of treatment comprises eighteen sittings and is repeated, if necessary—but only after the lapse of one month. The consumption of electricity, even when the equipment is functioning at the maximum, is a little less than 5 kilowatts an hour, the cost of which is about 7 francs (28 cents). The cost of the electrical apparatus was less than 10,000 francs ($400), and the whole equipment cost about 18,000 francs ($720), which is a comparatively low cost, which will make it possible to provide many other similar equipments in the communes in which the poor population supplies a large clientele of rachitic, athreptic and scrofulous children.

RIO DE JANEIRO

(From Our Regular Correspondent)

March 15, 1930.

Decrease of Tuberculosis in Brazil

Dr. Placido Barbosa presented a paper before the Second Pan-American Congress of Tuberculosis, at Rio de Janeiro in 1929, which dealt with the morbidity, mortality and prevention of tuberculosis in Brazil, as it was, as it is and as it is hoped to be in the future. He said that the native Brazilians did not have tuberculosis. The disease was imported and it caused high mortality among the negroes and the mestizo people. In 1860 the mortality at Rio de Janeiro was 12 per thousand, but from 1860 to 1890 improvement in general conditions of life diminished the mortality. From then until 1921 the mortality was over 4 per thousand. From 1922 to 1926 services to prevent tuberculosis were established, and the mortality diminished to a rate of 2.9 per thousand in 1926. Since the rate has for some time been stationary, the writer said that antituberculosis work should be now directed to other fields, such as the construction of hospitals and sanatoriums. Bovine tuberculosis has not played an important part in the dissemination of tuberculosis in Brazil. The age period in which tuberculosis develops most frequently in Brazil is similar to that in other countries. The epidemiologic factors have been contagion, deficient diet and insanitary living quarters.

Liver Therapy in Anemia

Dr. Hélion Póvoa has published an article on the hematogenic function of liver therapy. He says that since large quantities of raw liver together with a proper general diet, may bring about recovery in severe cases of anemia, liver diet should be considered as one of the best treatments for conditions caused by either grave or benign anemia but which are not developing in the form of the pernicious type. The treatment must be continued, stopped only at intervals, or decreased in amount and then reincreased. The author has obtained complete remissions in several patients who are at present in perfect health, having been under treatment for more than four years. In referring to the two principal objections to the treatment, lack of palatability and excess of proteins and purines, the author said that some palatability is obtained by preparing the liver in sandwiches, salad or similar dishes, after having been partially cooked. The author feels sure that, when good results are not obtained from liver diet in the treatment of the several syndromes of chronic anemia, the failure is due either to insufficient dosage or to the scanty amount of vitamins in the general diet. He presented reports of women of the Esquirol section in the National Insane Asylum, who had definite clinical symptoms of anemia, in association with such conditions as schizophrenia, manic-depressive psychosis, epilepsy, imbecility, mental debility and hysteria. While some of them were infested with worms and others suffered from malnutrition, the author did not give any specific treatment for those conditions in order to avoid any influence on the therapeutic results caused by the liver diet. Glycerinated ox liver extract, at the highest concentration possible to obtain at a low temperature, was given in 5 cc. doses with the principal meals. The group of patients at first comprised thirty women, but for various reasons the number decreased to fourteen patients, who received the treatment for sixty days. All these patients showed clinical improvement and hematologic changes which the author presented in detail in several charts. The author concludes that intense liver opotherapy, nonmassive (according to Whipple's method), is a valuable therapeutic measure either in anemia caused by verminosis or in that type of anemia which follows malnutrition. The method causes a rapid increase in the hemoglobin content, which in the author's cases was determined by Gowers-Sahli's apparatus. Arneth's index is deviated to the right; the number of leukocytes tends toward the normal; the number of red cells is increased, eosinophilia becomes marked; there is neutropenia with compensatory lymphocytosis, which may even amount to inversion of the ratio.

Injections of Mother's Blood for Furunculosis in Infants

From his experience, Dr. Navantino Alves presented the following conclusions: Furunculosis is a common infection in infants, which is manifested in the form of multiple abscesses. The condition develops especially in infants with a diminished resistance due to nutritional disturbances. Furunculosis is a general infection, though the principal symptoms are exhibited through the skin. In breast-fed infants the milk of the mother seems to cause some immunity against furunculosis, which makes the disease in those infants less frequent than in infants fed in other ways. Injections of the mother's blood constitutes an efficient treatment in furunculosis in infants. An amount of blood varying from 1 to 1.5 cc. is withdrawn in a sterile syringe from the vein at the mother's elbow and immediately injected in the gluteal region of the infant. The injection is repeated at three day intervals. The hemoclastic shock that sometimes follows the injection is not a constant manifestation in all infants with furunculosis. In addition to that it seems there is another stimulus to defense caused in the infant. The author presented in his paper reports of five infants successfully treated in this way.

MADRID

(From Our Regular Correspondent)

April 4, 1930.

Thallium Acetate Kills Fourteen Children

Some children in the Hospicio Provincial of Granada, who had ringworm of the scalp, were treated for more than two years without success with the roentgen rays and antiseptics; they also were isolated in a colony on the seashore, but the disease continued. Dr. Carlos Puertas, who was in charge of the treatment of the children, presented before the Municipal Welfare Committee a report on their condition, and Dr. Blasco Reta, head of the Children's Welfare Department, said that a consultation was held with Dr. Sainz de Aja, a specialist on trichophytosis in Madrid. After the consultation, the children were weighed and their urine examined, and on March 7 treatment with thallium acetate was begun. The treatment was given to sixteen children. They passed the first two days well. But early on March 9, the children began to complain, and one developed acute respiratory symptoms and died. On the following day the children exhibited symptoms of myelo-encephalitis and some of them died. It seems that Dr. Reta tried to avoid some of the facts becoming public, because the first deaths were reported as due to an epidemic of myelo-encephalitis. It was impossible to conceal that the administration of thallium acetate

caused the deaths, for necropsies confirmed the presence of lesions caused by that poison. The product used was a concentrated salt from a well known German pharmacist.

This catastrophe should be reported to all the world as a warning against the danger of thallium salts, the therapeutic dose of which is very near the limit of the lethal dose. Dr. Enrique Sainz de Aja, the specialist in trichophytosis, asserts that he has treated more than 300 cases with thallium acetate without untoward results. The dose he used is 6, 7 or 8 mg. of thallium acetate for every kilogram of the child's weight. The method he uses is as follows: A solution of 1 Gm. of thallium acetate in 1 liter of water is prepared. The child is carefully weighed. Hyperthymic children receive the smaller dose, and hypothymic children receive the larger dose. Dr. Sainz de Aja states that he observed in the hospital a child who was poisoned with thallium acetate because the physician gave him 7 centigrams per kilogram of body weight instead of the prescribed 7 milligrams. He states that the child did not die. Dr. Covisa, professor of dermatology of the Faculty of Medicine of Madrid, says that a specialist from some Spanish province, who attended his lectures, tried to use thallium acetate in his practice. Some time later he wrote saying that he had tried thallium acetate in two patients, and that both died. He used the entire dose of 7 mg. for each kilogram of weight on three successive days. On account of these errors, it has been emphasized that the dose of from 6 to 8 mg. per kilogram of body weight be *used only once*. The recent catastrophe was claimed to have been due to weighing out the drug in a defective scale. The newspapers say that a writ for a lawsuit against two physicians, a senior student of medicine, a pharmacist and a nurse for the deaths demands a bond of 375,000 pesetas ($75,000). One physician is charged with homicide; the other physician and the pharmacist are charged as accomplices. The student and the nurse are charged with concealing the delinquency. It has been proved that the fourteen children died as a result of a mistake in the dose of the drug, and that the scale in which the drug was weighed and the alleged moisture of the thallium salts were not a factor in the poisoning.

Medical Students and the End of the Dictatorship

In considering the social pathology that ended the dictatorship, it is enough to indicate that all students, but principally students of medicine, made frequent hostile manifestations against the dictatorship. On one occasion the students of the Faculty of Medicine of Madrid burned the picture of the king because he was suspected of complying with the governmental action of Primo de Rivera. This and similar happenings caused much trouble to the dean of the faculty of medicine, who is gynecologist to the queen. The hostility of the medical students strengthened the general feeling to end the dictatorship. It is hoped that from now on the students will not participate in political affairs.

The Valdecilla Sanatorium

General Martínez Anido, minister of the interior, came from Madrid to Santander to represent the government at the opening of the sanatorium donated to that city by Mr. Ramón Pelayo, the Marquis of Valdecilla. Mr. Pelayo was unable to attend because of illness. This magnificent hospital, called Valdecilla Sanatorium, in whose construction and equipment Mr. Pelayo spent twenty-two million pesetas ($4,400,000), is a group of several buildings. The workmen who constructed the hospital, the poor people and the representative business men of Santander met to praise the donor. Miss María Luisa Pelayo, a niece of the donor, gave 500,000 pesetas ($100,000) for the care of children in the sanatorium. The following other gifts were made to celebrate the opening: Mr. Garnica, ex-minister, administrator of the estate of Marquis of Valdecilla, 100,000 pesetas ($20,000) as a gift from the Banco Español de Crédito. The young women of Santander presented the school children with a dinner and distributed presents to 3,000 paupers. Mr. Bringas, the architect, gave a banquet to the workmen. Each ward has eight beds. Dr. López Albo is the director, and Dr. Emilio Diaz Caneja the assistant physician.

JAPAN

(From Our Regular Correspondent)

March 19, 1930.

Increase of Dysentery in Tokyo

In spite of all precautions against the epidemic, the cases of dysentery in Tokyo are reported to have increased in number, especially among children. The proportion of children affected under 6 years of age is 56 per cent; from 6 to 10 years, 18 per cent, and from 11 to 15 and each five years more than 15 it is only 4 per cent. The mortality during 1929 was 39.26 per cent.

Incidence of Dysentery

Year	Number of Cases	Per 10,000
1925	3,017	8.25
1926	3,283	6.78
1927	6,202	7.24
1928	8,271	16.15
1929	9,473	18.62

The Menses of Japanese Women

Dr. Obata has published the results of investigations on the menses of Japanese women. Questionnaires were sent to school girls in the Japan Girls' College, the Hamada Midwives' School and several other girls' high schools in Tokyo, and he received 15,032 replies. Fifteen medical investigators previously reported the average age of Japanese women when menstruation began as from 14 years and 5 months to 15 years and 9 months. According to Dr. Obata the average age is 14 years and 3 months; ordinarily it begins from 12 years and 7 months to 16 years. August is the first month of the year in point of number when the first menses come, and next in order are April, January and July. The average duration is four and eight-tenths days, ranging from three days to seven days.

Menstrual Ages	Number of Women Replying	Number of Menses	Average Days
0- 1	176	1,009	4.8
1- 2	336	2,019	4.8
2- 3	359	2,213	4.8
3- 4	261	1,634	4.8
4- 5	150	941	4.8
5- 6	90	545	4.6
6- 7	48	285	4.8
8-10	62	294	4.4

"The duration and quantity of the menses will be the less according to the older ages" is a common saying in this country, and the table shows that this is a fact. The intermenstrual period averages thirty-two and one-fifth days and ordinarily is from thirty-two to thirty-six days. The changes of the period occur within seventeen days in health, but for a year after the first menses the change will happen between twenty-eight and fourteen days in conditions of health.

The Second General Meeting of School Nurses

Under the auspices of the Imperial School Hygiene Society, the second general meeting of the school nurses was held in the Japan Red Cross Building at Shiba Park, Tokyo, March 11. After the opening address of Dr. S. Miyake, president of the society, addresses were given by Mr. Tanaka, minister of education, and Prince Tokugawa, president of the Japan Red Cross Society. Miss Tama Sase, of the Kisarazu Primary School in Chiba Prefecture, spoke about the ages of school girls in connection with accidents. She says that most accidents in girls will happen at the twelfth year, just before the period they

begin to grow up to be women. They do not get hurt at the thirteenth year because their increased weight and developed pelvis as well as mental unrest prevent them from being so active. She made investigations on 681 girls in her school for two years beginning in January, 1927.

Personal

The Tokyo Dental College of Dr. Chiwaki and the graduates have planned to hold a ceremony celebrating the thirty years' service of Dr. Okumura, professor in the college, and the ceremony will be held next July.

Dr. Kenkichi Asahi, professor of dermatology and syphilology in the Kyushu Imperial University, died, January 21, aged 57. He was president of the Japan Dermatology Association and the first organizer of the dermatology section in the university. He became ill soon after his return from the trip to China

BERLIN

(From Our Regular Correspondent)

March 31, 1930.

Report of Study of Scarlet Fever

The morbidity of scarlet fever has increased in Germany in recent years, and equally in almost all countries of Europe. In 1923, 17,025 cases of scarlet fever were officially recorded in Prussia; in 1928 the cases numbered 85,478. The greatest increase was reported in 1927, in which year there was an increase in Prussia of 27,639 cases over 1926. The increase in 1928 over 1927 was 19,981. These facts caused the Prussian minister of public welfare to induce the Prussian provincial council on health to make a special study of the best methods to combat scarlet fever. In the *Volkswohlfahrt*, Regierungs- and Medizinalrat Dr. Gersbach has published an article setting forth the results of the special study. It appears from this report that the rôle played by the hemolytic streptococcus in the pathogenesis of scarlet fever is not yet definitely settled. The question as to whether the bacteriologic observations alone constitute a reliable basis for raising the quarantine of scarlet fever patients is answered in the negative for the time being. The experiences with protective inoculations are too few to justify a final pronouncement as to their merit. The few reports that have been published speak, however, without exception for the great value of protective inoculation; likewise, the reports on the treatment with scarlet fever serum are nearly all favorable.

Experimental Research and Medical Ethics

In the federal council on health, a meeting was held, March 14, at which the question as to what extent experimental research on human beings is admissible was discussed in detail. Papers were presented by the members of the council, Dr. Moses; Dr. von Müller, director of the Medizinische Universitätsklinik (Munich); Dr. Schlossman, director of the Kinderlinik (Düsseldorf), and Dr. Stauder, chairman of the Deutscher Aerztevereinsbund (Nuremberg). The criteria that they presented were unanimously approved by the council. Scientific experiments on human beings were recognized as indispensable for progress in the diagnosis, prevention and healing of diseases, although the special responsibility resting on the physician who performs the experiments was likewise emphasized. Every experiment on human beings should, in its conception and mode of execution, comply with the principles of medical ethics. Unsystematic and unmotivated experimenting, experiments on man that might be done as well on animals, experiments on persons dying, unless for the immediate purpose of preserving life, and all experiments associated with an exploitation of social needs are disapproved. A precondition of every experiment on human beings is that all precautions and assurances must be taken that are available through the laboratory or through animal experimentation. An experiment must not be undertaken unless the person concerned or his lawful representative shall have given his consent. On every such experiment, an exact report must be made. Experiments in institutions for the care of the sick may be carried out only by the directing physician himself or by a physician whom he may designate, in which case the director must assume full responsibility. Experiments on children that involve any danger are permissible only in case they are required for the establishment of the diagnosis or for the prevention and cure of disease. The form in which reports of experiments are published must not fail to take account of the respect due to the patient. In conclusion, a demand was made that, in academic instruction, especial emphasis be laid on the great responsibility that a physician assumes in carrying out experiments on human beings, and the necessity of reporting the results strictly in keeping with medical ethics. The criteria recommended by the *reichsgesundheitsrat* will be transmitted to the governments of the provinces or states of the *reich* by the federal ministry of the interior. It is hoped that they will lead to the adoption of similar measures throughout the *reich*.

The executive committee of the Deutscher Aerztevereinsbund discussed recently in Berlin the attacks launched in public and in the reichstag against such experiments. It was agreed that without the application of new experiments and procedures there could be no progress in medical art and science. Research experiments may be undertaken only on the basis of conscientious biologic tests and only for purposes that would increase the knowledge of diagnosis and therapeutic methods. All trifling experimenting and lack of consideration for human sensibilities, especially in the form in which reports on such experiments are published, are disapproved by the medical profession. At the first reading before the committee on the drafting of a new penal code, the following original wording of the provision as contained in section 264 of the draft of 1927 was rejected by the committee: "Any one who inflicts a bodily injury with the consent of the person injured will be exempt from punishment unless such act shall be shown to be a violation of good morals." The Aerztevereinsbund will endeavor at the second reading to have this paragraph restored.

Attempt to Place Hotel Diets on a Scientific Basis

A new arrangement went into effect in Wiesbaden, April 1. At the instance of the diet commission of the Verein der Wiesbadener Aerzte, an attempt is being made to arrange hotel diets according to scientific principles. More than forty hotels have expressed a willingness to introduce this new Wiesbaden therapeutic diet. When the general plan of living is made out by the attending physician for each guest at the spa, the special diet is included for introduction in the hotels of the spa. The spa diet, according to an agreement with the Wiesbaden union of the hotels and inns, is to be introduced as auxiliary to the ordinary hotel diet, without any essential difference in price to the guests. It is merely supplementary to the general treatment that includes the mineral spring baths and the drinking of mineral spring water. The diet provides for the restriction of animal protein and for a generous use of leafy and root vegetables, salads, fruits raw and cooked, and certain raw foods.

Committee Warns Against the Study of Medicine

The Reichsausschuss für Aerzte und Krankenkassen discussed at a recent meeting overcrowding in the ranks of the medical profession and the large number of students who are taking up the study of medicine. In 1929, 3,500 students entered on the study of medicine. At present, thousands of physicians are not admitted to *krankenkasse* (sick benefit association) practice. The committee warns the youth now entering the universities to forego the study of medicine, as the greatest number of new physicians that can be utilized each year is from 700 to 800. On account of the overcrowding it will be several years before oncoming physicians will be admitted to practice in the *krankenkassen*.

Marriages

WILLIAM ANSON GARROTT, Memphis, Tenn., to Miss Ruth La Clair Waltrip of Cadiz, Ky., April 17.

THOMAS JACKSON CHARLTON, Savannah, Ga., to Miss Anne Carrington Read at New York, April 5.

MILTON T. JAY, Portland, Ind., to Mrs. Anna Grafton of Delphos, Ohio, in Indianapolis, March 30.

BENJAMIN F. ROLLER to Miss Jane Norris, both of New York at Greenwich, Conn., April 1.

Deaths

Giles Christopher Savage ⊕ Nashville, Tenn.; Jefferson Medical College of Philadelphia, 1878; secretary, 1888-1889, chairman, 1906-1907, of the Section on Ophthalmology, first vice president elected in 1903, trustee, 1896-1898, and member of the House of Delegates in 1902 of the American Medical Association; professor of ophthalmology, Vanderbilt University School of Medicine, 1886-1911; past president of the Tennessee State Medical Association, the Nashville Academy of Medicine and the Southern Medical Association; member of the American College of Surgeons; author of "New Truths in Ophthalmology," "Ophthalmic Myology," "Ophthalmic Neuro-Myology" and other books; formerly editor of the *Ophthalmic Record;* aged 76; died, April 8, of pneumonia.

James Davis Love ⊕ Jacksonville, Fla.; University of Maryland School of Medicine, Baltimore, 1897; member of the American College of Physicians; member of the faculty of the Southern Pediatric Seminary, Saluda, N. C.; on the staffs of the Duval County Hospital and St. Luke's Hospital; Physician in charge of the Florida Children's Home; aged 56; died, March 26, in a local hospital, of pneumonia.

Thomas Francis Roche, Blackstone, Mass.; Medical Department of the University of the City of New York, 1883; Bellevue Hospital Medical College, New York, 1883; member of the Massachusetts Medical Society; at one time member of the school committee; aged 74; died, March 8, at the Woonsocket Hospital, Woonsocket, R. I., of carcinoma of the cecum.

Everett Jay Phelps, Elderon, Wis.; University of Michigan Homeopathic Medical School, 1890; member of the State Medical Society of Wisconsin; served during the World War; aged 63; died, March 24, at the Wausau (Wis.) Memorial Hospital, of acute myocarditis, following scarlet fever and postdiphtheritic paralysis.

Franklin B. Scheirer, Allentown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1895; member of the Medical Society of the State of Pennsylvania; past president of the Lehigh County Medical Society; formerly county coroner; on the staff of the Sacred Heart Hospital; aged 62; died, March 30.

Ephraim G. Gowans ⊕ Salt Lake City, Utah; Baltimore Medical College, 1897; at one time judge of the Juvenile Court, superintendent of the State Industrial School and superintendent of public instruction, and director of health; formerly lecturer of hygiene, University of Utah; aged 62; died, February 5, of angina pectoris.

Frederick H. Perkins, Manchester, N. H.; Harvard University Medical School, Boston, 1892; member of the New Hampshire Medical Society; served during the World War; on the staff of the Hospital Notre Dame de Lourdes; aged 65; died in April, in Boston, following an operation for carcinoma of the rectum.

Henry Bird Fitts ⊕ Commander, U. S. Navy, retired, Lima, Peru; University of Virginia Department of Medicine, Charlottesville, 1880; entered the navy in 1882, was made a medical inspector in 1909 and retired in 1910, for incapacity incident to the service; aged 71; died, March 23, of arteriosclerosis.

Ervin Thayer Drake ⊕ Franklin, N. H.; Medical Department of the University of the City of New York, 1884; past president of the Centre District and Merrimack County Medical Society; on the staff of the Franklin Hospital; aged 72; died, April 2, of cerebral hemorrhage.

Charles D. Almon, Cleaton, Ky.; Kentucky School of Medicine, Louisville, 1894; member of the Kentucky State Medical Association; aged 61; died, March 31, at the Owensboro (Ky.) City Hospital, of meningitis as the result of septic tonsils.

John Albert Mapes, Seattle; University of Michigan Medical School, Ann Arbor, 1897; member of the Washington State Medical Association; served during the World War; aged 57; died, March 14, in a local hospital, following an operation for goiter.

David Henry Wherritt, Los Angeles; Rush Medical College, Chicago, 1902; formerly on the staffs of the Columbus, American and St. Joseph's hospitals, Chicago, and the Hollywood Hospital; aged 58; died, April 7, of arteriosclerosis and paralysis.

William Plumer, Farmington, Ill.; Keokuk (Iowa) Medical College, 1894; member of the Illinois State Medical Society; member of the school board; aged 61; died, March 29, at St. Francis Hospital, Peoria, of bronchopneumonia.

Charles Arthur Tetrault ⊕ Southbridge, Mass.; Yale University School of Medicine, New Haven, 1906; served during the World War; for many years chairman of the school committee; aged 53; died, April 8, of angina pectoris.

Daniel B. Collins, Madison, Wis.; Rush Medical College, Chicago, 1887; member of the State Medical Society of Wisconsin; aged 66; died in April as the result of the inhalation of flames when his clothing ignited from a cigar.

Maurice Musser Denlinger, Rohrerstown, Pa.; Jefferson Medical College of Philadelphia, 1890; member of the Medical Society of the State of Pennsylvania; served during the World War; aged 64; died, April 6, of septicemia.

John William Morgan, Denver; Kentucky School of Medicine, Louisville, 1890; member of the Colorado Medical Society; for sixteen years inspector for the state board of health; aged 66; died, February 22, of heart disease.

Franklin Bunting Miller ⊕ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1886; on the staff of the Presbyterian Hospital where he died April 3, of lobar pneumonia, aged 70.

Spurgeon John Railey, Handsom, Va.; Medical College of Virginia, Richmond, 1910; member of the Medical Society of Virginia; aged 45; died, March 26, of poisoning with carbolic acid, self administered.

Louis H. Snow, Jamestown, N. Y.; Medical Department of the University of the City of New York, 1886; aged 71; died, February 27, of hypertrophy of the prostate, arteriosclerosis and chronic myocarditis.

James Franklin Dicks, Stoneville, N. C.; University College of Medicine, Richmond, 1901; member of the Medical Society of the State of North Carolina; aged 53; died, March 23, of chronic nephritis.

William C. Keen ⊕ Burkesville, Ky.; Medical Department, University of Tennessee, Nashville, 1881; secretary of the Cumberland County Medical Society; aged 76; died, April 1, of heart disease.

Robert Henry Michels ⊕ A. A. Surg., Lieut. (j. g.), U. S. Navy, Chicago; Rush Medical College, Chicago, 1900; aged 50; died, April 4, at the U. S. Naval Hospital, Great Lakes, Ill., of heart disease.

Willis P. Sperry ⊕ Phillips, Wis.; Medical Department of Western Reserve University, Cleveland, 1881; aged 73; died, March 20, at the General Hospital, Ashland, of cerebral hemorrhage.

Horatio Warren Gass ⊕ Sunbury, Pa.; Medico-Chirurgical College of Philadelphia, 1898; medical superintendent of the Mary M. Packer Hospital, where he died, March 21, aged 61, of sciatica.

Edmund Randolph Laine, Caldwell, N. J.; Homeopathic Medical College of the State of New York, 1868; formerly mayor; aged 82; died, March 17, of arteriosclerosis and bulbar paralysis.

Frank Carl Waldecker, New York; George Washington University School of Medicine, Washington, D. C., 1908; aged 48; died, March 31, in London, England, of meningitis.

Wallace Everett Brown ⊕ North Adams, Mass.; Bellevue Hospital Medical College, New York, 1890; aged 76; died, April 4, in a hospital at Fort Collins, of cerebral hemorrhage.

Charles Thomas O'Brien ⊕ Woburn, Mass.; Harvard University Medical School, Boston, 1902; formerly city physician; aged 56; died, January 31, of carbon monoxide poisoning.

Andrew Jackson Gibbons, Carmichaels, Pa.; Miami Medical College, Cincinnati, 1878; aged 81; died, March 13 at the Western Pennsylvania Hospital, Pittsburgh, of nephritis.

David Jenness Brookings, Woodward, Iowa; Rush Medical College, Chicago, 1869; Civil War veteran; formerly mayor of Woodward; aged 88; died, April 2, of senility.

James Alford Glascock, St. Louis; National University of Arts and Sciences Medical Department, St. Louis, 1914; aged 45; was accidentaly shot and killed, March 21.

Eugene Banks Pendleton, Owensboro, Ky.; University of Louisville School of Medicine, 1889; served during the World War; aged 64; died, March 9, of chronic myocarditis.

Harry Leonard Jacobs ✠ Chicago; Medical Department of the University of Illinois, Chicago, 1903; aged 64, died, April 20, of nonepidemic meningitis, following mastoiditis.

J. Augustus Evans, Houston, Miss.; Kentucky School of Medicine, Louisville, 1885; aged 68; died, February 11, of uremia, following an operation on the prostate.

Frederick R. Tolson, Lafayette, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1882; aged 77; died, March 31, of lobar pneumonia.

William Kimbal Read ✠ Texarkana, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1894; aged 58; died in March of heart disease.

John Parsons, Washington, D. C.; Georgetown University School of Medicine, Washington, 1870; aged 83; died, February 10, of arteriosclerosis and myocarditis.

Belle Platt White ✠ Springfield, Mass.; Woman's Medical College of Baltimore, 1893; aged 58; died, March 31, of chronic myocarditis and acute dilatation of the heart.

Joseph D. Blair, Washington, D. C.; Howard University School of Medicine, Washington, 1895; aged 63; died, March 21, of arteriosclerosis and chronic nephritis.

John A. Tyree, Danville, Va.; Medical College of Virginia, Richmond, 1908; member of the Medical Society of Virginia; aged 43; died in March of nephritis.

Adin Sherman ✠ Winnebago, Wis.; Chicago Medical College, 1890; superintendent of the Northern Hospital for the Insane; aged 63; died, March 31.

Philip C. Sanderson, Philadelphia; Chicago Homeopathic Medical College, 1885; veteran of the Civil War; aged 84; died, April 7, of chronic nephritis.

Hugh Maxwell Dewar, Chicago; Kansas City Homeopathic Medical College, 1891; aged 59; died, April 15, of chronic nephritis and arteriosclerosis.

Frank Herbert Butler, Syracuse, N. Y.; Bellevue Hospital Medical College, New York, 1872; aged 80; died, March 5, of carcinoma of the intestine.

Leman Gibbs Clark, Glenwood Springs, Colo.; Rush Medical College, Chicago, 1884; aged 79; died, March 2, of a self-inflicted gunshot wound.

Oliver G. Falls, Kings Mountain, N. C.; University of Maryland School of Medicine, Baltimore, 1881; aged 73; died, April 5, of heart disease.

Harry Arnold Briney, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1895; aged 68; died, March 20, of chronic myocarditis.

John Barton Miller ✠ Sligo, Pa.; Jefferson Medical College of Philadelphia, 1901; aged 56; died, April 4, of agranulocytic angina and pneumonia.

William Pellham Turk, Atlanta, Ga.; Atlanta Medical College, 1892; aged 60; died, February 28, of acute myocarditis and nephritis.

Lafontain Baldwin Powers, Port Hope, Ont., Canada; McGill University Faculty of Medicine, Montreal, 1867; aged 87; died, February 22.

Joseph J. Chambliss, Phoenix, Ariz.; Louisville (Ky.) Medical College, 1878; aged 72; died, March 22, of cerebral hemorrhage.

Albert Hubert Hoeffer, Los Angeles; Denver College of Medicine, 1886; aged 67; died, February 23, of uremia and osteosarcoma.

Charles Duncan Garrett, Rockymount, Va.; Medical College of Virginia, Richmond, 1925; aged 28; died, March 17, of tuberculosis.

Algan T. Knox, Thomson, Ky.; Kentucky School of Medicine, Louisville, 1894; aged 65; died, March 26, of cerebral hemorrhage.

Titus Chauncy Loose, Dime Box, Texas; Starling Medical College, Columbus, 1896; aged 56; died, January 9, of heart disease.

John Lot Curtis, South Bend, Ind.; Louisville National Medical College, 1910; aged 51; was shot and killed, March 7.

James M. Powell, Monmouth, Ore.; University of California Medical School, 1876; aged 77; died, February 23.

Bureau of Investigation

JOHN R. BRINKLEY, QUACK

He Continues to Get Publicity

The newspaper reports of the past few weeks on John R. Brinkley, who has been described as the "goat-gland grafter" and who has made a Kansas crossroads settlement into a second-class postal station, continue to bring stories of the experiences of a few of Brinkley's victims. Also, the publicity has brought out other facts that, while doubtless not news to those who are fully acquainted with Brinkley, have been unknown to the general public and the medical profession.

As has been shown before, the Brinkley advertising has capitalized the fact that he is a member of the Masonic order and the further fact that he has his own Methodist Church, with a new one in the offing. "Lawks, sirs, we keeps a minister"! It appears that, in addition, Brinkley has seen to it that he has his own political tie-up. According to the newspaper reports, Attorney General William A. Smith of Kansas, the legal adviser of the state medical board, has a brother-in-law—one Percy S. Walker—who is said to be the head of Brinkley's association of druggists—those pill dispensers who have so far forgotten their professional obligations as to split fees with Brinkley after furnishing numbered prescriptions broadcast by Brinkley for Tom, Dick and Harry, as well as Mary, Jane and Sarah. It is further stated that druggist Walker is also a member of the state pharmaceutical board, having been appointed to that position by the governor.

It is news in Kansas or Missouri papers that one of Brinkley's attorneys is Colonel James E. Smith, who is the son-in-law of Governor Reed of Kansas and that one of Governor Reed's highway commissioners is a stockholder in the Brinkley radio station! Moralising on this interesting political situation, one Kansas paper comments as follows:

"This chase of Dr. Brinkley in the year of Our Lord 1930 isn't the simple matter of some years ago. Next day after the battle started Dr. Brinkley was on the air broadcasting his battle cry to all the world. State officials who usually might welcome an opportunity to stand courageously behind the medical board got buck ague and lost their desire for heavy groceries. Now conversation is much in the direction of conclusions that while some gestures may be made toward Dr. Brinkley, he really won't be hit with anything except with padded gloves."

We referred last week to the excellent series of articles by Mr. A. B. Macdonald of the staff of the Kansas City *Star*. Some of the persons who have fallen victims to Brinkley's quackery have been giving their experiences. Mr. Macdonald reports that of a Mr. H, a Kansas farmer:

"I have been ruined by Dr. Brinkley and his assistant, Dr. Osborn. I am 71 years old and have worked hard all my life, saved some money here on this farm and reared a family here, but I had a trouble that came upon me in my old age and I used to sit here and listen to Dr. Brinkley talk over the radio and he described my ailments exactly. I got so I used to listen to him every day, and he always told he could cure cases like mine, so I wrote him and got a lot of letters from him. He wrote me that if I would come to Milford, he would perform a simple operation that would cure me in five days.

"Two years ago the eleventh of this month my wife and I went to Milford, arriving about 4 o'clock in the afternoon. I drove up in my car and at 9 o'clock that night it came my turn to be examined. Both Drs. Brinkley and Osborn examined me and said I had a terrible case of prostate trouble and asked me if I wanted to be cured. They said there would be no doubt of my cure. They would not undertake my case unless they were positive they could cure me. Mrs. Brinkley came to me and gave me a long talk. She had a check for $750, all filled out, and I signed it.

"I was operated on at 9 o'clock at night. Brinkley and Osborn simply ruined me, that's all. I have been unable to do a day's work since they operated on me. I want an opportunity to go before the medical board of Kansas and let those doctors see how I have been mangled and mistreated by men who call themselves surgeons.

"I wrote to Brinkley, demanding my money back, but he would not return a cent. I still suffer all the time and am a nuisance to every one I come in contact with."

Then there was the case of Mr. E, another citizen of Kansas, fifty-eight years old, who, suffering from prostate trouble, listened to the siren voice of KFKB and entered into correspondence with the quack, finally deciding to go to Milford. Brinkley set the time so that Mr. E would arrive in the village on Sunday afternoon. To quote from part of Mr. E's story:

"Some dozen or more arrived with me that Sunday night and we were all assigned to rooms. The hospital was so crowded there were two of us in one room, a little stuffy place. Some time Sunday night Dr. Osborn gave me an examination and said I had either a fibrous or cancerous condition. If fibrous, he could cure me easily; if cancerous, he could give me great relief. Now I notice he says he never takes a cancer case. Well, he offered to take mine if it was cancerous.

"Late that Sunday night Mrs. Brinkley came to me and urged me to take the operation. Mrs. Brinkley guaranteed a speedy cure, and I signed a check for $356.50, and at 11 o'clock that Sunday night they operated on me. I was on the operating table exactly fifteen minutes.

"I had trouble from it and sent for Mrs. Brinkley and she said: 'Go to sleep and forget it.' I continued to get worse, and on Friday they insisted that I go home. I told Mrs. Brinkley that I had made up my mind to stay until Sunday, but she made me go home."

Infection set in and it was necessary for Mr. E when he got home to send for a local reputable physician to take care of him. Mr. E reports that he has been an invalid ever since he returned from Brinkley's. As he puts it:

"I am a ruined man, physically, all on account of being lured by radio to go to Brinkley. I can't understand how our government, which is supposed to protect us from frauds, gives a license to a quack to use a radio broadcasting station to lure victims into his net. That is a mystery to me."

It may be remembered that in one of the previous articles on this subject, Brinkley was quoted as declaring that he only owned a single share in the broadcasting station KFKB. Mr. Macdonald investigated this claim and found it to be technically true but essentially false. He states that KFKB is incorporated under the laws of Kansas with a capital of $150,000 and a thousand shares. Only eight out of these thousand shares are owned by any one other than the Brinkley family. Of the other 992, one is in Brinkley's name and the other 991 are in the name of Mrs. Brinkley! Mrs. Brinkley may be remembered, incidentally, as the individual who has posed as a physician, with a diploma from the Kansas City "diploma mill." She is not licensed to practice medicine in the state of Kansas. Evidently, therefore, split fees that are sent in by druggists who are filling the Brinkley broadcast prescriptions and which Brinkley declares go to the "broadcasting fund" go essentially to the Brinkleys, the owners of more than 99 per cent of the KFKB stock.

ELECTRIFIABLE PLATES

Another Fraud Debarred from the Mails

The Post Office Department reports that J. M. Hughes, his wife, Mrs. J. M. Hughes, and his daughter, Essie I. Hughes, all of Atlanta, Ga., have for some time been defrauding the public under the trade name "Electrifiable Company" in the sale of so-called heel plates. These plates were crudely cut by an Atlanta tinner from sheets of copper and zinc. They cost 25 cents a pair; they sold at $5 a pair! It was claimed that, when worn in the shoes, the plates would cure hardening of the arteries, high blood pressure, enlargement of the heart, kidney trouble, hardening of the prostate gland, diabetes, rheumatism and dropsy! Business was obtained through advertisements and circulars sent through the mails and distributed personally by members of the Hughes family and agents.

According to the Hughes thesis, the various diseases and ailments in which the use of the heel plates was claimed to effect a cure are caused by uric acid in the bloodstream. The heel plates were said to cause the blood of the person wearing them to be heated about two degrees, and that this increased temperature caused the uric acid to be dissolved, thus eliminating the disease! Elemental, my dear Watson!

On December 7, 1929, the Electrifiable Company and J. M. Hughes were called on to show cause why the business should not be debarred from the mails. On January 8, 1930, the postal authorities received a letter from Branch and Howard, attorneys of Atlanta, denying the charges, but no appearance was made either in person or by attorney on the date set for the hearing. The only evidence submitted by the concern was ten affidavits by laymen who swore they had been cured of diabetes, high blood pressure, and other afflictions.

On Jan. 16, 1930, the Postmaster General, on the recommendation of the Solicitor for the Post Office Department, issued a fraud order against the Electrifiable Company and J. M. Hughes.

Correspondence

ACUTE ABDOMINAL PAIN IN RHEUMATIC FEVER

To the Editor:—In THE JOURNAL, February 22, page 594, I note an abstract "Rheumatic Fever: Onset with Peritoneal Symptoms." In connection with this I thought it might be of interest to note a case which I reported in a paper entitled "Some Acute Abdominal Conditions in Childhood Secondary to Parenteral Infections," read before the Arkansas Valley Medical Association, February 6.

A white boy, aged 5 years, had had chickenpox, measles, typhoid, parotid abscess, chronic tonsillitis with acute attacks, and, ten days before his present trouble, bilateral otitis media. January 2, both ear drums were incised and drained pus freely. At that time, too, he had nasal obstruction and pus in the nose. Just before midnight, January 9, he had severe abdominal pain. An enema was given with fair results but no relief from pain, which was still present when I saw him at 10 o'clock the following morning. The pain was quite general and constant. He had vomited soon after onset and again in the early morning. The bowels had been constipated and moved only with the enema. The boy was apparently in severe pain. He walked in a doubled-over position and protecting his abdomen. His temperature was 101 by mouth, pulse was 138, and respirations were 28. There was no cough or altered respiratory rhythm. There was a purulent discharge from the right ear. The left ear was dry, but the drum was red and showed flakes of dried blood. The nose was somewhat obstructed and there was a slight purulent discharge. The tonsils were large and cryptic but not acutely inflamed. The anterior cervical glands on both sides were enlarged but not tender. The lungs were clear throughout. The heart was rapid, but there were no murmurs and no enlargement. The abdomen showed some distention, generalized tenderness and a boardlike rigidity. I thought that the tenderness appeared a little greater over the appendical region. There were no neurologic signs. With the history of sudden onset, abdominal pain and vomiting, and the physical observations of distention, tenderness and rigidity, temperature and rapid pulse, I made a probable diagnosis of acute appendicitis with beginning peritonitis rather than a lymphadenitis, though I thought the parenteral infection was the primary cause. A white blood count at this time showed 29,300 and a differential showed 6 mature lymphocytes, 14 immature lymphocytes and 1 endotheliocyte. A Schilling differential count of neutrophils showed 3 per cent metamyelocytes; 17 per cent staff forms and 59 per cent polymorphonuclears.

After three hours' observation in the hospital under expectant treatment there was no improvement, so an operation was decided on. At that time the temperature was 101.2, the pulse

was 120, and respirations were 28. The chest was reexamined just before operation and nothing abnormal was found. Operation revealed a normal appendix macroscopically and microscopically. While an extensive exploration of the abdomen was not made, there was no lymphadenitis or other abnormality in the immediate field of operation.

His temperature, pulse and respiration were lower following the operation and he did not complain of the abdominal pain. On the 13th, the third day after operation, the temperature ranged from 99 to 100.6, the pulse was between 84 and 88, and the respirations were 24. On the 14th the temperature went to 103.2, pulse 128, and respirations 30. Examination of the lungs revealed nothing abnormal and the heart tones were clear, but the right knee was painful, swollen and tender. On the 15th the right knee was better, but the left wrist was involved and following this a day or two later the right wrist. On the 18th a soft systolic murmur was heard at the apex of the heart. On the 20th he complained of precordial pain and a definite pericardial friction rub was present. The right ear was still draining at this time but in lessening amount and the left ear had entirely recovered.

In a search of the literature I have been unable to find a record of the onset of acute rheumatic fever in a child with the acute, severe abdominal symptoms presented by this case. Many pediatric works mention the possibility of abdominal pain preceding or accompanying joint symptoms, and McLean in a report of 118 cases says that "sixteen of the children were brought to the office because of pains in the abdomen." Nothing is said about tenderness, rigidity, distention, vomiting and constipation in association with the pain. Peritonitis is often merely mentioned as a possible complication.

While the cause of the symptoms in this case is conjectural, it is my opinion that it was an involvement of the abdominal group of muscles analogous to the torticollis, pleurodynia, lumbago and so-called growing pains in the legs, now thought by many authorities to be manifestations of rheumatic fever. Another possibility is the involvement of a localized area of the peritoneum with the submiliary nodules of rheumatic fever, the same as are seen more frequently in the pericardium and rarely in the pleura. Referred pain from spinal arthritis was thought of, but there was no evidence of such involvement.

J. D. GEISSINGER, M.D., Pueblo, Colo.

THE USE OF PITUITARY SOLUTION

To the Editor:—I would like to take issue with recent contributions to medical literature which have commented adversely and, in my opinion, without sufficient justification on the use of solution of pituitary for induction of labor. I refer especially to Dr. A. M. Mendenhall, whose article was featured in your issue of April 20, 1929. More recently Dr. Nicholas Temesvary (*Am. J. Obst. & Gynec.*, February, 1930) in presenting his favorable impressions from experimentation with thymophysin has dismissed the use of pituitary extract with the rather sweeping statement that it can be given only during the expulsion period or at the utmost with a disappearing os uteri, "as it often causes tetanic contractions of the uterus, which may be harmful to the mother and the fetus during the dilatation period."

If Dr. Mendenhall had endeavored to impress his readers with the necessity of thorough knowledge of technic in use of pituitary solution, I would agree with him wholeheartedly. But to condemn its use by reason of the evidence he presents is to draw his conclusion from an incomplete premise.

Dr. Mendenhall has delved into the literature to accumulate a table of eighty-nine cases of ruptured uterus from the employment of pituitary solution, reported from 1913 to 1927. He acknowledges frankly it is regrettable that his search of the literature failed often to disclose the dosage or "ascertain many needed facts from which to draw the conclusion properly." Nevertheless, he does proceed to draw the conclusion that it is a "very dangerous drug . . . is never safe in the first stage of labor . . . rarely if ever safe in the second stage of labor" and that "only now and then does an obstetrician step forth in its defense."

On the question of dosage, in my opinion, rests the crux of the pituitary question. Yet, of the eighty-nine cases of ruptured uterus reported by Dr. Mendenhall in his tabulation, only eighteen of the forty-six authorities reviewed gave any information regarding size of dosage. Of the eighteen authorities who did mention the dosage of pituitary solution that produced rupture of the uterus, the smallest dosage of the series was 4 minims. Mendenhall says: "In nine cases the dose was 1 cc., and in six cases the dosage was 0.5 cc. One patient received 4 minims (0.25 cc.), another 5 minims (0.3 cc.) and another a first dose of 4 drops and a subsequent dose of 5½ drops."

I have had ample clinical experience with pituitary solution, and, I believe, was the first to recommend the use of smaller doses for the induction of labor and in the first stage. A report of my familiarity with it may be found in the various articles which have appeared under my name in the medical publications; more recently in the July 1, 1929, issue of the *New York State Journal of Medicine* (abstracted in THE JOURNAL, Aug. 24, 1929, p. 646).

In my experience I have found small doses of pituitary extract, frequently repeated, an extremely useful method of inducing labor at term or of shortening labor in cases of uterine inertia. As early as 1917, realizing the danger of violent contractions and rupture of the uterus following large doses, I employed only 3 minim doses. W. A. Scott in 1926 (*Am. J. Obst. & Gynec.* **12**:571 [Oct.] 1926) sent a questionnaire to representative American obstetricians in regard to the use of pituitary extract to induce labor and concluded from the replies that "there is almost unanimous opinion among those using this method that the original dosage as proposed by Dr. Watson [10 minims] is too large and they either use smaller doses throughout or start with smaller doses and increase slowly."

Since 1917 I have reduced the dosage to 2 minims (0.12 cc.) given at hourly intervals. With this method labor has been successfully induced or its duration shortened in a considerable series of cases. In no instance have I observed any ill effect to mother or child. As far as I have been able to conclude, pituitary extract has no cumulative effect, and danger of inducing severe uterine spasms and possible rupture lies in the use of too large a single dose, not in a repetition of very small doses at proper intervals.

Recent medical literature does not fail to support generously my contention that safety and pituitary extract are entirely compatible, provided the size of the dosage is small. In 1928, Calmann (*Centralbl. f. Gynäk.* **52**:432 [Feb. 18] 1928) employed my method to induce or shorten labor in approximately 700 cases and states that his results were uniformly good. He did not observe a single instance of tetanus uteri from the small doses of pituitary extract administered. In March, 1929, the *American Journal of Obstetrics and Gynecology* published Reis's report (from the Michael Reese Hospital, Chicago) of a series of cases in which pituitary extract was used for the induction of labor, employing 1 minim doses repeated every half hour until labor began or a maximum of eight doses had been given. The best results, 90 per cent successful inductions, were obtained with the combination of castor oil, quinine and pituitary extract. There was only one case of mild uterine tetany reported, requiring no treatment and with uneventful labor.

In discussing Reis's paper, C. B. Reed, with an experience of nine or ten thousand labors wherein pituitary extract had frequently been exhibited under his supervision, maintained that he had not found a single instance in which the disability of mother or child could be logically attributed to the drug.

Danger and damage can result from any drug which is ignorantly employed, said Dr. Reed. Like strychnine, morphine, antitoxin or even the knife, pituitary extract is susceptible of misuse. Yet, argued Dr. Reed, such useful agents as these are not to be abandoned because improper methods prove disastrous.

In considering the whole pituitary controversy, the most important question is that of dosage. Large doses are admittedly dangerous. But practically all who have followed my method of administering repeated doses of 2 or 3 minims are agreed that it is both safe and effective as a means of inducing or shortening labor.

ARTHUR STEIN, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PHYSICAL FACTORS GOVERNING TREATMENT WITH GALVANIC CURRENT

To the Editor:—I would greatly appreciate it if you could advise me as to the voltage required and resistance to send from 0 to 50 milliamperes through various parts of the body as employed in treatment with the galvanic current and its modifications. I am familiar with electrical laws concerning potential, resistance and current. If you will inform me as to the resistance of the human body to the current, I shall be able to figure out the problem.

M.D., Philadelphia.

ANSWER.—The human body consists of a composite mass of tissues with varying electrical resistance. The skin can be considered as a semipermeable membrane the conductivity of which is increased by mechanical, thermal or chemical stimuli. The horny layer of the skin offers most of the resistance. The relative porosity or the distribution of the sweat glands determines skin resistance considerably; hence the better conductivity of the palms of the hands as compared with the backs of the hands. The size of the electrodes and the distance between them also is of importance; when a larger surface is offered for the entry of the current there will be a proportional decrease in skin resistance. This is demonstrated when a current is applied in a full water bath, when large amounts can be introduced. Pressure on the electrodes tends to decrease skin resistance by effecting a closer contact and by producing a greater saturation with moisture. The conductivity of all other tissues of the body depends on their content of water and their relative density, muscle and brain conducting better than tendons and fascias. The resistance of internal organs such as the liver, lungs, stomach and intestine varies with the relative content of blood, air, connective tissue and their contents. The resistance of the skin being comparatively greater than that of all other parts, one can consider its resistance as a measure of the resistance of the entire body, and the interposition of the inner organs and parts of varying structure becomes a factor chiefly because it increases the distance intervening between the electrodes and makes the path of the current longer.

The second principal factor in determining the amount of current passing through the body is related to the form of the current, its mode of flowing, its voltage, and amperage, and the duration of flow. There exists a relatively high resistance toward the galvanic current because of the phenomenon of polarization, this current giving rise to the flow of an opposing current. When the modification of the galvanic current in the form of a slow sinusoidal current is applied, there is much less polarization, and hence the skin resistance is much less. This explains the data of Laqueur showing that the resistance from arm to arm to a galvanic current is 1,050 ohms, while that to an alternating current of low frequency is only 250 ohms; from arm to leg the resistance to the straight galvanic current is 1,600 ohms, and to the alternating current only 360 ohms.

The voltage required to send a current up to 50 milliamperes will therefore depend on the factors enumerated and may vary from 50 to 100 volts, according to the size and distance of the electrodes, the portion of the body included, the condition of the skin, and, finally, whether a straight galvanic or a sinusoidal current is employed.

PLASMOCHIN

To the Editor:—A white man, aged 35, was given plasmochin compound tablets (Winthrop) for malaria about six weeks ago. The dose given was four tablets daily, the drug being given one week and skipped a week until the drug was taken for three weeks. Some weeks later the patient developed a disturbance in vision. The specialist consulted suggested the possibility of this having been caused by plasmochin. He also informed the patient that the drug was extremely dangerous and should never be used. In the cases I have employed plasmochin I have had no trouble. I would appreciate your opinion of the drug.

THOMAS M. ADAMS, M.D., Montezuma, Ga.

ANSWER.—The "plasmochin compound" referred to by our correspondent is stated by the manufacturer to be "sugar coated pills containing 0.01 Gm. of plasmochin and 0.125 Gm. of quinine sulphate." The only way in which the drug can be characterized as "extremely dangerous" is that its safe (but efficient) dose is much smaller than that of quinine. Its most important untoward effect is cyanosis due to methemoglobin formation. Abdominal pains have also been produced by it. It is liable to cause the symptoms of cinchonism, such as tinnitus and dizziness; and it has been charged with favoring the occurrence of blackwater fever. In the available reports, impairment of sight has not been attributed to it; but, with its well known tendency to produce the other symptoms of cinchonism, one would not be surprised at its producing visual disturbances as well. There are cases of quinine idiosyncrasy in which plasmochin is well tolerated, and vice versa.

William E. Deeks advocates that the daily dose of this drug should not exceed 0.04 Gm. (with 1 to 2 Gm. of quinine) for a period not exceeding six days; or 0.06 Gm. of plasmochin for a period not exceeding four days. He has the patient return after three or four days and, if the blood is still positive, the course is repeated.

The Council on Pharmacy and Chemistry published a preliminary report on plasmochin in 1927, when the product was not being marketed in this country. Now the Winthrop Chemical Company markets "plasmochin compound," but has not taken steps to make this preparation accepted for New and Nonofficial Remedies.

ORTHODONTIA

To the Editor:—When a child's teeth are crooked, is it advisable to have them straightened or is the operation successful? If advisable, when should it be done? About how long (over how many years) does the process of straightening extend? Does time tend to rectify the trouble, or will crooked teeth remain crooked? The patient whom I have in mind is 11½ years of age and has not yet menstruated. Kindly omit name.

M.D., Missouri.

ANSWER.—Much progress has been made in this field during recent years by both the dental and the medical profession. The correction of faulty tooth position has a direct effect on the teeth and mastication, the oral passages and facial deformity, all of which are important enough to warrant the procedure. Surgical widening of the arch is less often used than the slower but equally effective (in the usual case) method of slow mechanical pressure. The time to begin the corrective process is perhaps still unsettled. It is well to begin early rather than late. Work may be started under the age of 5 years to advantage. When started early, the spread may be made easily and in a few months' time. The general health and nutrition are of importance as well as a clear upper respiratory tract. The removal of hypertrophied tonsils and adenoid growths should not be neglected.

EPILATION BY X-RAYS IN RINGWORM

To the Editor:—What dosage of x-rays is required to cause a temporary loss of hair in the treatment of a case of ringworm of the scalp? How much difference is there between this dose and one that would cause a permanent loss of hair? In a temporary loss, how long before the hair returns? Please omit name.

M.D., Oak Park, Ill.

ANSWER.—McKee (X-Rays and Radium in the Treatment of Diseases of the Skin, ed. 2, Philadelphia, Lea & Febiger, 1927, p. 255) gives the skin unit or epilation dose as 64 kilovolts, 3 milliamperes, at 8 inches distance from the target to the skin for five minutes. This "will nearly always produce fairly complete defluvium" (p. 462) in children between 2 and 12 years of age. Under 2 years, three fourths of this dose should be used. Over 12, the dose varies up to 1¼ units. Permanent loss of hair is caused by a dose resulting in second degree dermatitis; that is, one manifested by decided edema or erosion. For this, several times the skin unit would be required. This would no doubt vary a good deal in different cases. With the proper dosage, the hair begins to regrow in from one to three months. If it does not regrow in six months, the loss will be permanent.

ANESTHETIC FOR CHILDREN — SOFTENING CERUMEN

To the Editor:—1. Kindly advise me as to what general anesthetics may be used for infants and children. Could ether be used as a general anesthetic when opening the ears of a baby 18 months old. 2. Can you offer a good prescription for softening hardened cerumen in children's ears?

C. E. JOHNSON, M.D., St. Paul.

ANSWER.—1. Ether is in many ways the safest anesthetic. It may be used on children of any age, even those much younger than 18 months. Many operators have during the past year or two employed ethylene, and when properly and carefully given it is a safe and pleasant anesthetic. Many operations have been done with ethylene on children even as young as 1 year of age without any untoward results. The patients go to sleep in about one minute and wake up within a minute after the anesthesia is discontinued.

2. One of the best things for softening cerumen either in children's or in adults' ears is slightly warmed glycerin dropped into the ear and allowed to remain over night. One may also use liquid petrolatum or olive oil for the same purpose. Glycerin in many ways is best.

DERMATITIS FROM ZINC OXIDE PLASTER

To the Editor:—One of my patients invariably has a marked reaction whenever any zinc oxide adhesive plaster is used. I find that even a small piece on the skin of other parts of the body brings out the same reaction, while zinc oxide itself has no effect. The reaction is a typical one, with swelling and redness, and it promptly subsides with the use of epinephrine. If there have been other reports of cases of this kind, and especially any investigation with a report of results, I would be pleased to be put in contact with such investigation so that I might study it a little. I wonder what ingredients would be likely to cause this reaction.

H. V. SCARBOROUGH, M.D., Oakdale, Iowa.

ANSWER.—Dermatitis induced by zinc oxide adhesive plaster has been a matter of common observation for several years. It occurs, as do other forms of allergy, in hypersensitive persons. When once such hypersensitiveness is determined in an individual, the best method of management is preventive, which means avoiding the sensitizing agents. It has been the experience of most workers that attempts to immunize hypersensitive persons through small dosage of the sensitizing substances have been futile. Such sensitizations usually are permanent. In some instances, however, they disappear spontaneously.

HYPERSENSITIVITY AFTER SWIMMING

To the Editor:—One of our high school boys, each school year when he swims in the tank, develops over the general body surface, arms and thighs a macular eruption which fuses in the areas about the neck, axillary region and popliteal spaces, and in the groins. If the exposure in the water is continued, it becomes fiery red and scaly. Inside of four or five days, if he remains out of the tank, the eruption will almost entirely disappear. He does not get this in exposure to water in other locations, as in the river or lakes, or in our ordinary city water used for bathing purposes. Sterilization of the water in the high school pool is carried on by the means of ultraviolet rays, which is the only factor in which the water differs from other water that this boy uses. Is the factor which causes the irritation in these cases known? If so, is there any preventive that will allow the boy to use the pool without developing this eruption?

CHARLES C. ALLEN, M.D., Austin, Minn.

ANSWER.—The patient undoubtedly is hypersensitive to something that is difficult to determine. Light used in sterilizing water has not been known to produce any irritation on the skin. There are people who are sensitive to light. Acute dermatitis as well as urticaria has been induced by the sun's rays. If it had been the rays themselves, the patient would probably have shown hypersensitiveness in other ways. A further examination of the water should be made. It is possible that some vegetable material might be found. On the other hand, one certainly could not say that the rays used were entirely irresponsible.

PHYSICAL THERAPY IN GONORRHEAL ARTHRITIS

To the Editor:—Will you kindly discuss the indications for treatment with particular reference to the use of physical therapeutic methods in acute gonorrheal arthritis? I am particularly interested in the applicability of diathermy to the treatment of an extremely acute arthritis with swelling and redness.

O. M. UNGER, M.D., Providence, R. I.

ANSWER.—Little active or stimulating treatment by physical methods can be applied to acute gonorrheal arthritis. The use of heat, applied in various ways, is, of course, generally understood. Diathermy is contraindicated in extremely acute arthritis of all types, and even dangerous. Of all types of acute arthritis, indications for rest and immobilization are particularly pertinent in this type. Probably a considerable amount of harm is being done in the treatment of acute arthritis by too great enthusiasm in the application of physical treatment. It is a difficult question to say when the acuity of a joint infection has subsided enough to justify the exhibition of various methods of stimulating hyperemia.

REST FOLLOWING CONCUSSION OF THE BRAIN

To the Editor:—Will you please tell me whether or not there is any generally accepted criterion as to how long a patient suffering with persistent headache, dizziness and insomnia, which have come on following a concussion of the brain twenty-seven days ago, should be kept in the hospital. Please omit name.

M.D., Michigan.

ANSWER.—It is the custom at present to keep patients in bed a minimum of at least three weeks following a minor concussion of the brain. This is in the event that they have had a careful course of hypertonic solutions for the treatment of their edema. However, in the event that headache persists they should be kept flat in bed until this has disappeared entirely before being allowed up. Adherence to the rule that patients should be kept flat in bed for three weeks or more following a skull injury will prevent many of the after-complaints of dizziness, vertigo and headaches.

AGGLUTINATION OF BRUCELLA ABORTUS

To the Editor:—On numerous occasions our laboratories have reported positive agglutinations in serums with *Brucella abortus* in dilutions as high as 1: 80 and at times higher. These cases have been checked and the physicians report no clinical history or evidence of undulant fever. It would be appreciated if you would be good enough to give me your opinion in these cases and the cause of positive agglutinations.

J. D. JUNGMAN, M.D., Bismarck, N. D.

ANSWER.—Agglutination of *Brucella abortus* by the serum of persons who give no history of undulant fever is regarded generally as due to previous infections with *Brucella abortus* that for some reason or other were not recognized. The presence in the blood of specific abortus agglutinins indicates that the body at some time or other has been influenced by abortus antigens. It is, of course, possible that abortus infection may be so mild as not to give rise to any recognizable symptoms at the time (subclinical infection).

HYDROCEPHALUS

To the Editor:—I am the family physician of a young couple who were married two years ago. Nine months after their marriage the wife gave birth to a hydrocephalic baby with spina bifida and clubfoot. The baby is alive yet with an enlarged hydrocephalic head. Their family histories, as well as their own blood and spinal fluid examinations, are negative. It has been examined several times. The mother of the husband has borne seven children, all in good health, and never had any abortion. One of the cousins of the wife's father gave birth to a baby with a spina bifida and it lived only three days, but after that she bore three other children, all healthy, and they grew to old age. The husband and wife are healthy and sober. Their ages are about the same. There is nothing abnormal or pathologic with their genital organs, no abuses occurred before or after their marriage, and no physical injury while she was pregnant; hence, there is no conceivable cause for their having a hydrocephalic baby. They are anxious to have another baby. Is it right to encourage them to have another baby? What treatment, if any, would prevent the recurrence? Please omit name.

M.D., New Jersey.

ANSWER.—There is no reason to advise against a second pregnancy. The combination of hydrocephalus, spina bifida and clubfoot is not uncommon. The cause of these developmental errors is not clear. Syphilis being excluded, nutritional defects in the parents are thought to be a possible factor.

TREATMENT OF DRY MOUTH

To the Editor:—Please give me the causes and treatment of persistent dry mouth and bad taste in the mouth. These complaints have been frequent in my practice. Please omit name.

M.D., Rhode Island.

ANSWER.—If obvious local causes, such as mouth breathing, foul teeth or tonsils, or bronchiectasis, can be eliminated, one is generally safe in suspecting "biliousness," most commonly due to colon stasis, at the bottom of this condition. For best results, one should make a thorough study of the gastrointestinal tract, including test meals, stool examination and roentgenograms, and correct whatever deviation from the normal may become revealed. If such a study is impossible, one may consider occasional courses of mild mercurous chloride and saline purgation as probably the most successful means of improving the condition temporarily. A laxative diet—an abundance of fruits, vegetables, bran and water—together with vigorous exercise, may lessen the frequency with which the drugs may have to be put into requisition.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Regular Board. Little Rock, May 13-14, 1930. Sec., Dr. S. J. Albright, Searcy, Ark. Homeopathic Board. Little Rock, May 13, 1930. Sec., Dr. Allison Pringle, Eureka Springs, Ark. Eclectic Board. Little Rock, May 13, 1930. Sec., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith, Ark.

CONNECTICUT: New Haven, June 7, 1930. Basic Science. Chairman, Prof. C. M. Bakewell, Box 1895, Yale Station, New Haven, Conn.

DELAWARE: Wilmington, June 10-12, 1930. Sec., Dr. H. L. Springer, 1013 Washington St., Wilmington, Del.

IOWA: Iowa City, June 3-5, 1930. Dir., H. W. Grefe, Des Moines, Iowa.

FLORIDA: Lakeland, June 16-17, 1930. Sec., Dr. Wm. M. Rowlett, P. O. Box 603, Tampa, Fla.

GEORGIA: Augusta, June 4-6, 1930, and Atlanta, June 11-13, 1930. Sec., Dr. B. T. Wise, Americus, Ga.

KANSAS: Kansas City, Kan., June 17, 1930. Sec., Dr. Albert S. Ross, Sabetha, Kan.

KENTUCKY: Louisville, June 10, 1930. Sec., Dr. A. T. McCormack, 532 West Main St., Louisville, Ky.

MARYLAND: Baltimore, June 17-20, 1930. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore, Md. Basic Science. June 17-18, 1930. Sec., Dr. J. S. Garrison, 517 Old Orchard Road, Baltimore.

MICHIGAN: Ann Arbor, June 10-12, 1930, and Detroit, June 16-18, 1930. Sec., Dr. F. C. Warnshuis, 1010 Maccabee Bldg., Detroit.

MINNESOTA: Minneapolis, June 17-19, 1930. Sec., Dr. E. T. Sanderson, 524 Lowry Bldg., St. Paul. Basic Science, June 3-4, 1930. Sec., Dr. E. T. Bell, 110 Anatomy Bldg., University of Minnesota, Minneapolis.

MISSOURI: St. Louis, June 11-13, 1930. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City, Mo.

NEBRASKA: Omaha, May 6-7, 1930. Basic Science. June 10-12, 1930. Regular. Sec., Mr. Ernest M. Pollard, Lincoln, Neb.

NEVADA: Carson City, May 5-7, 1930. Sec., Dr. Edward E. Hamer, Carson City, Nev.

NEW JERSEY: Trenton, June 16-17, 1930. Sec., Dr. Charles B. Kelley, 1101 Trenton Trust Bldg., Trenton, N. J.

NORTH CAROLINA: Raleigh, June 16, 1930. Sec., Dr. John W. MacConnell, Davidson, N. C.

OHIO: Columbus, June 9-12, 1930. Sec., Dr. H. M. Platter, Ohio State Savings Bldg., Columbus, Ohio.

TENNESSEE: Memphis, Nashville and Knoxville, June 13-14, 1930. Sec., Dr. A. B. De Loach, Medical Arts Bldg., Memphis, Tenn.

VERMONT: Burlington, June 18-20, 1930. Sec., Dr. W. Scott Nay, Underhill, Vt.

VIRGINIA: Richmond, June 17-20, 1930. Sec., Dr. J. W. Preston, 720 Shenandoah Life Bldg., Roanoke, Va.

WYOMING: Cheyenne, June 2, 1930. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne, Wyo.

Alabama January Examination

Dr. Stuart Graves, secretary of the Board of Medical Examiners of Alabama, reports the written examination held at Montgomery, Jan. 14-17, 1930. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Ten candidates were examined, 9 of whom passed and 1 failed. The following colleges were represented:

PASSED	Year Grad.	Per Cent
Rush Medical College	(1929)	87.2, 90.3*
University of Nebraska College of Medicine	(1929)	88.7
University of Pennsylvania School of Medicine	(1929)	92.9
University of Tennessee College of Med	(1929)	85.2, 86.3, 86.4, 87.2
University of Virginia Department of Medicine	(1929)	86.2

FAILED	Year Grad.	Per Cent
Chattanooga Medical College	(1901)	66.5

*This applicant has received a four year certificate and will receive his M.D. degree on completion of one year's internship in a hospital.

Connecticut Endorsement of Credentials

Dr. Thomas P. Murdock, secretary of the Medical Examining Board of Connecticut, reports fifteen physicians licensed by the endorsement of credentials at a meeting held at Hartford, April 12, 1930. The following colleges were represented:

ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
Yale University School of Medicine	(1927)	N. B. M. Ex.
Georgetown University School of Medicine	(1921)	Dist. Colum.
Chicago College of Medicine and Surgery	(1914)	Mass.
Rush Medical College	(1922)	Illinois
Johns Hopkins Univ. Sch. of Med.	(1920)	N. B. M. Ex., (1925) Maryland
Harvard Univ. Medical School	(1924)	New York, (1925-27) N. B. M. Ex.
Columbia University College of Phys. & Surgs.	(1898) (1915)	New York
Cornell Univ. Med. Coll.	(1910) (1914)	New York, (1928) N. B. M. Ex.
McGill University Faculty of Medicine	(1922)	New York

Book Notices

GALL-BLADDER DISEASE: ROENTGEN INTERPRETATION AND DIAGNOSIS. By David S. Beilin, B.S., M.D., Roentgenologist, Augustana Hospital, Chicago. Cloth. Price, $6. Pp. 65, with illustrations. St. Paul: Bruce Publishing Company, 1929.

This is in atlas form and presents the subject of the normal and pathologic gallbladder from the roentgen point of view. It is more correct to say that it is largely an exposition of the Graham test in cholecystography by oral administration. The author gives little consideration to the intravenous administration of the dye, dismissing it with the statement that "the oral method is just as reliable as the intravenous." This statement will be concurred in by all those who find it more convenient to give the test material by mouth than to use the intravenous method with its more exacting call on professional skill. The bald statement as given will not be admitted by those who administer the drug intravenously in the belief that a sufficiently greater degree of accuracy is possible by this method. A number of roentgenologists who use the oral method because it is easier fall back on the intravenous method in doubtful cases. This attests the greater reliability of the latter. The author also states that there are no reactions from the oral administration of the dye and that nausea, vomiting and diarrhea are absent in 99 per cent of the cases. This, too, is not in accord with the experience of many roentgenologists who use the oral method in large series of gallbladder investigations by the Graham test. The generous pages, 11 by 14 inches, permit the use of larger illustrations than is possible in books of usual size. These illustrations graphically present the roentgen observations. The type is of ample size and is also to be commended, and the text is well written and quite informative. The author's record of 98 per cent correct roentgen diagnoses is an efficiency mark that many roentgenologists of large experience will envy. The book will be found of considerable value to physicians interested in the subject of oral cholecystography.

ÉTUDES NEUROLOGIQUES. Par Georges Guillain, professeur de clinique des maladies du système nerveux à la Faculté de médecine de Paris. Troisième série. Paper. Price, 70 francs. Pp. 453, with 119 illustrations. Paris: Masson & Cie, 1929.

This book consists of a collection of disjointed observations by the author published in collaboration with his pupils. It is difficult to understand the necessity for republishing this material in book form. The reports are mostly studies of single cases, none of epoch-making importance, and all seem to have been published in journals easily accessible.

A HANDBOOK OF THE MOSQUITOES OF NORTH AMERICA: THEIR STRUCTURE, HOW THEY LIVE, HOW THEY CARRY DISEASE, HOW THEY MAY BE STUDIED, HOW THEY MAY BE CONTROLLED, HOW THEY MAY BE IDENTIFIED. By Robert Matheson, Professor of Entomology, New York State College of Agriculture, Cornell University. Cloth. Price, $5.50. Pp. 268, with illustrations. Springfield, Ill.: Charles C. Thomas, 1929.

The author has attempted to summarize the general knowledge of mosquitoes, including life histories, importance and control, together with a concise taxonomic description of the North American species, in such a way that public health workers, medical men and others not having a technical entomologic training can follow the descriptions. The book can be divided into two parts. The first, consisting of five chapters, is really an introduction to the second and gives a brief but clear description of the external anatomy of the various stages of mosquitoes, their general biology, their relation to human welfare with particular reference to the diseases they transmit, their control by reduction, and their collection, rearing and preservation for study. In the main this section serves its purpose admirably, but the following criticisms may be legitimately raised: Chapter IV, on the problem of mosquito reduction, gives an outline of the methods used for the control of the insects, but much more attention should have been paid to the necessary preliminary work. In particular, some discussion should have been included of the methods for determining the important malaria vectors. Similarly, chapter V, on methods of study, might have been improved by the addition of methods of dissection with particular reference to the demonstration of

malarial parasites and filarial worms. The second part of the book, comprising a systematic account of the North American mosquitoes, is excellent. Not only is each species adequately described, but various tabular keys are given in the text. The book is admirably printed and the illustrations deserve especial mention, not only for their accuracy but also for their large number and beauty. The publication of these monographic descriptions of mosquitoes from restricted regions, popularized to the extent that field workers and scientists not primarily trained in entomology can use them, is greatly to be commended.

DIE REZEPTIERKUNST DES PRAKTISCHEN ARZTES. Von Prof. Dr. Fritz Munk. 37. Jahrgang, Heft 411: Berliner Klinik. Herausgegeben von Dr. Friedrich Michelsson. Paper. Price, 1 mark. Pp. 20. Leipzig: Fischers med. Buchhandlung, 1930.

In this small brochure, physicians are urged to write their own prescriptions for their patients rather than to fall a victim to the medicine manufacturers' propaganda, as the patients have much more faith in a remedy prescribed and put up especially for their individual case than in one machine-made by the million. Modern medicine suffers, for example, from a "tablet epidemic." The belief in the mystical efficiency of medicine, which modern pharmacology has been doing its best to destroy, asserts itself even among the physicians who fall victims to propaganda and prescribe the latest proprietary, promoted with sufficient bombast, even though it is nothing more than a mixture of old, well known and more or less discredited ingredients.

PRACTICAL PSYCHOLOGY AND PSYCHIATRY FOR USE IN TRAINING-SCHOOLS FOR ATTENDANTS AND NURSES AND IN MEDICAL CLASSES, AND AS A READY REFERENCE FOR THE PRACTITIONER. By C. B. Burr, M.D. Sixth edition. Cloth. Price, $2.75 net. Pp. 378, with illustrations. Philadelphia: F. A. Davis Company, 1930.

This is a book by a man possessed of adequate knowledge and with half a century of experience in the study and treatment of the mentally ill. In addition to these qualifications, which, after all, are not so uncommon, the author has two other qualifications to a marked degree: wisdom and literary talent. The essentials of abnormal psychology, general and special psychiatry and mental hygiene are treated in a clear, sane and interesting manner, so the book can be highly recommended to the general practitioner.

Students in training schools, social workers, medical classes and practitioners, many of whom have missed the elements of psychiatry in their medical or premedical course, would find here valuable material for their consideration; wise suggestions, resourceful methods of treatment. From the standpoint of the pharmacopeia, "treatment" is a small factor. The word "management," broadly embracing the entire environment of the patient, embodies the author's conception. *Suaviter in modo, fortiter in re* is the attitude inculcated in the "management" of the psychoses and the psychoneuroses which form so large a proportion of the doctor's clientele in the present day.

This author knows how to lend attractiveness to his subject. Clever touches of wit and humor enliven his pages and at the same time add cogency to the views presented.

ÉTUDES SUR LES MALADIES FAMILIALES, NERVEUSES ET DYSTROPHIQUES. Par O. Crouzon, médecin de la Salpètrière. Préface de M. le Professeur Pierre Marie. Paper. Price, 55 francs. Pp. 385, with illustrations. Paris: Masson & Cie, 1929.

As Marie states in the preface, the author deals with his subject in a clear and competent manner, he contributes many new observations and new points of view, and the many illustrations from original photographs add much to elucidate the text. The usual familial diseases, such as myopathies, ophthalmoplegias, optic atrophies and ataxias, are naturally discussed, but much space is given to some rare conditions, largely known to us through the work of the author, such as dysostosis craniofacialis and cleidocranialis.

A TEXT-BOOK ON ORTHOPEDIC SURGERY. By Willis C. Campbell, M.D., F.A.C.S., Professor of Orthopedic Surgery, University of Tennessee College of Medicine. Cloth. Price, $8.50. Pp. 705, with 507 illustrations. Philadelphia: W. B. Saunders Company, 1930.

This volume is conventional without being in any way trite. It is clear, well written and well balanced. The subject of orthopedic surgery, which is becoming yearly more difficult to define, is covered in a satisfactory manner. The reader cannot help but profit from the chapter devoted to orthopedic examination. The chapters on traumatic arthritis, bursitis, and injuries of the soft parts are enlightening and add live interest to the old fashioned text on orthopedic surgery. The author, well versed in his subject, has written a book that will prove useful to both student and practitioner; its illustrations are first class, its subject grouping is pleasing, and the general effect is attractive.

MANUEL DE NEUROLOGIE. Tome I: L'anatomie du système nerveux: Une tentative de grouper en système fonctionnel les voies et les centres de localisation diverse, par lesquels les diverses impressions sensorielles peuvent se traduire en réactions réflexes. Partie 4: La pars intermedia du tronc cérébral. Par le Dr. C. Winkler, professeur de neurologie et de psychiatrie à l'Université de l'État à Utrecht. Paper. Pp. 265, with illustrations. Haarlem: Erven F. Bohn, 1929.

This new portion of Winkler's large anatomic work fulfils the promise made of an excellent and most comprehensive textbook of neurologic anatomy.

REPORT OF THE SPECIAL COMMITTEE APPOINTED BY THE LOCAL AUTHORITY AT THEIR MEETING OF THE 30TH APRIL, 1927 (p. 80, item 2) ON THE QUESTION OF THE ESTABLISHMENT OF A STANDARD OF PURITY FOR THE PORT-OF-SPAIN WATER SUPPLY. By Dr. Tito P. Achong. Paper. Pp. 22. Port-of-Spain, Trinidad, 1929.

A standard of purity based on the absence of *Bacillus coli* in 50 cc. of water was recommended by the majority of a commission. A minority report was presented by Councilor Achong. The latter report consists of an excellent discussion of the water supply problems confronting the authorities at Port-of-Spain. The author recommends the adoption of the water standards of the United States Public Health Service and the control of chlorination by tests for residual chlorine in the purified water.

THE NECK: A ROENTGENOLOGICAL STUDY OF THE SOFT TISSUES, CONSIDERATION OF THE NORMAL AND PATHOLOGICAL. By Percy D. Hay, Jr., M.D., Roentgenologist of the McLeod Infirmary, Florence, S. C. Volume IX of Annals of Roentgenology. A Series of Monographic Atlases. Edited by James T. Case, M.D. Introduction by Henry K. Pancoast, M.D., Professor of Roentgenology, University of Pennsylvania. Cloth. Price, $8. Pp. 104, with 66 illustrations. New York: Paul B. Hoeber, Inc., 1930.

This is a special treatise on the part that the x-rays play in examinations of the region of the neck. This is a region in which the average x-ray film is not usually considered as of great value other than determining the condition of the cervical vertebrae. The author proves in text and illustrations that there is far more help to be gained by adequate roentgen studies of this anatomic region than is usually considered possible. This book, which is the ninth of a series of monographic atlases on x-ray subjects, is of the same high order of authorship and illustrative material as its predecessors. The roentgenographic appearances of normal and pathologic states of various tissues and structures of the neck are admirably presented and the book is a highly instructing work.

DIE DIÄTETISCHE VOR- UND NACHKUR BEI DER OPERATIVEN BEHANDLUNG DER LUNGENTUBERKULOSE. Von Dr. med. et phil. Adolf Herrmannsdorfer. Sonderdruck aus Band LV, Heft 1 der „Zeitschrift für Tuberkulose." Redigiert von A. Kuttner, und Lydia Rabinowitsch. Paper. Price, 2.50 marks. Pp. 18, with 21 illustrations. Leipzig: Johann Ambrosius Barth, 1929.

The author refers to his previously published articles on this subject. His point is that remarkable benefit may be obtained by his method of dietary treatment, in cases of far advanced pulmonary tuberculosis. He states that cases of exudative and productive lesions may be transformed into productive fibrose or even into pure fibrose forms of tuberculosis with great reduction in the amount of sputum. He claims that his system of diet is especially advantageous in preoperative or even postoperative cases. In this article Herrmannsdorfer does not give his rules of diet in detail, merely stating that the cure depends on constant and prolonged painstaking effort on the part of physician and nurses. Nineteen cases are reported in detail. It is bewildering to note improvement after three or four months in some cases while others needed from one and one-half to two and one-half years. One wonders as to whether or not the value of rest in some of these cases has not been minimized.

HANDBUCH DER NORMALEN UND PATHOLOGISCHEN PHYSIOLOGIE MIT BERÜCKSICHTIGUNG DER EXPERIMENTELLEN PHARMAKOLOGIE. Herausgegeben von A. Bethe, G. v. Bergmann, G. Embden, und A. Ellinger. Band V.: Stoffwechsel und Energiewechsel: Gesamtstoffwechsel, Energiewechsel, Intermediärer Stoffwechsel. Bearbeitet von F. Bertram, K. Boresch, usw. Paper. Price, 118 marks. Pp. 1325, with 48 illustrations. Berlin: Julius Springer, 1928.

Laboratory workers as well as clinicians will hail and acclaim the present volume of the Handbuch; it is simply indispensable for those working in the field of metabolism. The table of contents alone comprises fifteen pages. A selection of some of the more important subsections may indicate to the interested reader what the book contains: metabolism during exclusive protein, carbohydrate or fat intake; the protein minimum; total metabolism in the herbivora; metabolism during work, at different temperatures, during growth, during psychic processes (in health and disease), during hunger, undernutrition and overnutrition in pathologic states (exclusive of endocrine disturbances); pharmacology of total metabolism; metabolism in plants; comparative physiology of metabolism. Then follow sections on intermediary metabolism (carbohydrates, fats and proteins) in health and disease; nuclein and cholesterol metabolism, and the vitamins. The last chapter deals with degenerative processes accruing in protein, carbohydrate, fat, pigment and mineral metabolism, together with a section on necroses induced by nervous, circulatory, chemical, bacterial and physical processes or agents. It should be noted that a separate volume (volume XVI) will deal with salt and mineral metabolism. Certainly, no active physiologic laboratory or progressive hospital can afford to be without this authoritative and monumental treatise on metabolism. No other book, in any language, offers a similar amount of information on this field of medical knowledge.

INCOMPATIBILITY IN PRESCRIPTIONS AND HOW TO AVOID IT, TO WHICH IS ADDED A DICTIONARY OF INCOMPATIBILITIES. By Thomas Stephenson, D.Sc., Ph.C., F.R.S., Examiner to the Pharmaceutical Society of Great Britain. Cloth. Price, $1.50. Pp. 61. New York: Paul. B. Hoeber, Inc., 1929.

This is a collection of various incompatibilities which have appeared from time to time in the *Prescriber*, of which the author is editor. That it met with popular demand, particularly in Great Britain, is evidenced by the fact that, since 1915, it has gone through three editions. Part I is devoted to general principles of incompatibility, including chemical incompatibility, physical or pharmaceutical incompatibility, and therapeutic incompatibility. Part II is a small dictionary of incompatibilities containing an alphabetical summary of drugs with their doses and solubilities. The booklet should find a ready place on the desk of the busy prescribing physician.

L'HYDROTHÉRAPIE MÉDICALE. Par R. Dubois de Saujon, directeur de l'établissement hydrothérapique de Saujon. Paper. Price, 15 francs. Pp. 129, with 5 illustrations. Paris: Gauthier-Villars & Cie, 1930.

This brochure on medical hydrotherapy is part of a series on physical therapy intended to supply the student and practicing physician with information on the "most important practical fact of physical therapy in the clearest and briefest possible manner." Hydrotherapy, as discussed by Dubois, is well calculated to meet the aims set forth for this portion of physical therapeutic practice.

DISEASES OF CHILDREN FOR NURSES INCLUDING PEDIATRIC NURSING, INFANT FEEDING, THERAPEUTIC MEASURES EMPLOYED IN CHILDHOOD, TREATMENT FOR EMERGENCIES, PROPHYLAXIS, AND HYGIENE. By Robert S. McCombs, M.D., Instructor of Nurses at the Children's Hospital of Philadelphia. Sixth edition. Cloth. Price, $2.75 net. Pp. 594, with 151 illustrations. Philadelphia: W. B. Saunders Company, 1929.

Textbooks intended for the use of nurses should be clearly, simply and carefully written. This book supplies the facts concerning the diseases of children in clear, comprehensive language. In addition there is an article on nursing in childhood which has been written by Miss Margaret C. Erxleben. The material in this portion is not as clearly presented as in other parts of the book and there are occasional ambiguities. There are also several misleading statements, such as "Keep children's feet covered at night; it prevents colic." A knowledge of the symptoms of the various diseases of children and the methods of treatment employed in pediatric practice are invaluable for the nurse. This knowledge will enable her to apply more intelligently the practical aspects of her profession. This book will serve as a source for obtaining this information and as such has much to recommend it. Improvement in the diction of several portions will make it even more valuable.

Medicolegal

Implied Promise to Pay for Medical Services

(Clark v. Diefendorf (Conn.), 147 Atl. 33)

The plaintiff, a physician and a close friend of his patient, rendered medical services to her for eighteen years but never submitted a bill. He was named executor in her will. After her death, he as her attending physician submitted to himself as her executor a bill for $3,000 for professional services. Commissioners were appointed, at the instance of two persons to whom legacies had been left, to pass on the physician's claim. They allowed him $1,600, and the legatees appealed to the superior court of New Haven County. The jury rendered a verdict in favor of the physician for only $190.22, and thereupon he appealed to the Supreme Court of Errors of Connecticut.

The physician's claim for compensation in this case was based on an implied promise. Ordinarily, said the appellate court, when one requests another to perform services in the usual course of the latter's business, a sufficient basis exists to render the former liable for their reasonable value. The basis of that liability is the inference that the person rendering the services expects to be paid for them and that the other person accepts them intending to pay. An implied promise by the testatrix to pay in the present instance arose if the physician rendered his services expecting that they would be paid for, and if the patient intended to pay for them, or if the patient knew, or as a reasonable person should have known from the circumstances, that the physician expected to be paid. The facts that the physician in this case occupied a relationship to the testatrix beyond that of an ordinary physician to his patient, that he gave her advice as to her financial affairs, the disposition of her property by will, and other matters, that she bequeathed him a substantial legacy, and that during the more than eighteen years covered by his present claim he never submitted a bill were sufficient, said the court, to raise issues which were properly submitted to the jury, as to the physician's intention to charge for his services and as to the intention of the deceased of paying for them.

Exception was taken by the physician to an instruction given by the trial court that such claims as this one should be carefully scrutinized and should be held to be established only on satisfactory proof. He contended that the rule stated applies only where a claim is made for services rendered by a relative. The rule, said the Supreme Court of Errors, has no such limited application. It is based on the fact that a living claimant occupies a position of great advantage because the other party to the transaction is dead. The caution enjoined by the rule is necessary to guard against imposition and fraud. The rule is particularly applicable when the executor or administrator is himself the claimant and when a claim which might have been presented during the lifetime of the testatrix has been allowed to lie dormant until after death.

The Supreme Court of Errors held, however, that the trial court erred when it charged the jury that the validity of the physician's claim depended on a specific intent on the part of the deceased to pay for the services rendered. Even though the deceased had no actual intent of paying, if the circumstances were such as to apprise her as a reasonable woman that the physician expected payment, then the jury could find in favor of the physician. The instruction given by the trial court was in error because it eliminated from the jury consideration of such a situation. The judgment of the trial court was, therefore, set aside, and a new trial ordered.

Evidence: Exhibition of Wounds to the Jury.—The witness, after testifying that the defendant shot him and indicating where the bullet entered and where it left his body, opened his shirt and showed the wounds to the jury. The defendant was convicted of assault with intent to murder and appealed to the Court of Criminal Appeals of Texas. He complained that the physical exhibition of the wounds tended to add unnecessary color to the prosecution and was damaging to the defense. The record contained nothing tending to show that the exhibition of the wounds was calculated to inflame the minds of the jury or to arouse their sympathy or create a feeling of prejudice, but the appellant contended that, regardless of the character of the wounds, the mere fact of their exhibition was sufficient to compel a reversal. But, said the court, evidence of this character is unquestionably demonstrative evidence, and there is no reason why in a proper case it may not be resorted to by the state directly, in making out its proof of the truth of the charge against the accused. In *Newman* v. *State,* 85 Texas Cr. R. 558, 213 S. W. 651, it was held that it was error to exhibit the wounds to the jury, but in that case the scars exhibited were of such a nature as to indicate that the wounds were serious, and the scars were ugly and uncomely in appearance. It was held improper, too, in *Chapman* v. *State,* 66 Texas Cr. R. 489, 147 S. W. 580, for a physician to take the bandages off the wounds of the injured party in the jury's presence, exhibit the wounds to the jury, and explain the operation performed. In the present case, however, the introduction of the scars without any showing that they were of such nature or character as might reasonably appeal to the sympathy of the jury or inflame their minds, or prejudice the cause of the accused, did not constitute reversible error.—*Runnels v. State (Texas), 19 S. W. (2d) 322.*

Wills: Testamentary Capacity; Testimony of Lay Witness.—Before a lay witness may testify that in his opinion a testator was not of sound mind when he executed his will, the witness must ordinarily detail facts on which he bases his opinion. But if he expresses the opinion that the testator was of sound mind, a detailed statement of the facts on which that opinion is based will not be required. Evidence of unnatural provisions of a will is not sufficient in itself to establish the testamentary incapacity of the testator, but where there is other substantial evidence of such incapacity the unnatural provisions of the will may be considered along with it to show incapacity. —*Kaechelen v. Barringer (Mo.) 19 S. W. (2d) 1033.*

Damages: Nervousness as an Element of.—The appellant apparently contended that because the respondent did not suffer from broken bones as the result of an automobile collision, but sustained only cuts and bruises and a nervous shock, he could not have received serious injury. But, said the court, it is a fact well within human experience that suffering from the disruption of the nervous system may be and often is more intense and severe than almost any other form of suffering. Nervousness, when the reasonable outcome of physical injuries, is always an element of damage, and evidence relating thereto may properly be submitted to the jury.—*Johnson v. Pearson (Calif.) 280 P. 394.*

Society Proceedings

COMING MEETINGS

American Medical Association, Detroit, June 23-27. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of the Feebleminded, Washington, D. C., May 5-10. Dr. H. W. Potter, Thiells, New York, Secretary.

American Association for Thoracic Surgery, Philadelphia, May 12-14. Dr. Duff S. Allen, Washington University Medical School, St. Louis, Secretary.

American Association of Genito-Urinary Surgeons, French Lick, Ind., May 22-24. Dr. Herman L. Kretschmer, 122 S. Michigan Avenue, Chicago, Secretary.

American Bronchoscopic Society, Atlantic City, May 27. Dr. Louis H. Clerf, 128 S. Tenth Street, Philadelphia, Secretary.

American Climatological and Clinical Association, Quebec, May 12-14. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Mass., Sec'y.

American Dermatological Association, Cleveland, June 19-21. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.

American Gastro-Enterological Association, Atlantic City, May 5-6. Dr. Charles G. Lucas, 321 West Broadway, Louisville, Secretary.

American Gynecological Society, Hot Springs, Va., May 19-21. Dr. Floyd E. Keene, 133 S. 36th Street, Philadelphia, Secretary.

American Laryngological Association, Swampscott, Mass., May 22-24. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, May 28-30. Dr. Robert L. Loughran, 33 E. 63d Street, New York, Secretary.

American Neurological Association, Atlantic City, June 9-11. Dr. Henry A. Riley, 117 East 72d Street, New York, Secretary.

American Ophthalmological Society, Hot Springs, Virginia, June 2-4. Dr. Emory Hill, 501 E. Franklin Street, Richmond, Va., Secretary.

American Otological Society, Swampscott, Mass., May 20-22. Dr. Thomas J. Harris, 104 E. 40th Street, New York, Secretary.

American Pediatric Society, Montreal, June 17-19. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Physiotherapy Association, Detroit, June 23-24. Miss C. H. Ballard, St. Francis Hospital, San Francisco, Secretary.

American Proctologic Society, Buffalo, New York, June 22-24. Dr. Curtice Rosser, Medical Arts Building, Dallas, Texas, Secretary.

American Psychiatric Association, Washington, D. C., May 5-10. Dr. C. O. Cheney, Hudson River State Hospital, Poughkeepsie, N. Y., Sec'y.

American Radium Society, Detroit, June 23-24. Dr. G. W. Grier, 500 Penn Avenue, Pittsburgh, Secretary.

American Society for Clinical Investigation, Atlantic City, May 5. Dr. Cyrus C. Sturgis, Simpson Memorial Institute, Ann Arbor, Mich., Sec'y.

American Society of Clinical Pathologists, Detroit, June 20-23. Dr. H. J. Corper, Metropolitan Building, Denver, Secretary.

American Surgical Association, Philadelphia, May 15-17. Dr. Lincoln Davis, 205 Beacon Street, Boston, Secretary.

American Therapeutic Society, Detroit, June 20-21. Dr. William J. Mallory, 1720 Connecticut Avenue, Washington, D. C., Secretary.

American Urological Association, New York, June 10-12. Dr. Alexander Randall, Medical Arts Building, Philadelphia, Secretary.

Arkansas Medical Society, Fort Smith, May 6-8. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Association for Research in Ophthalmology, Detroit, June 24. Dr. Conrad Berens, 30 East 40th Street, New York, Secretary.

Association for the Study of Allergy, Detroit, June 23-24. Dr. Warren T. Vaughan, 118 East Franklin Street, Richmond, Va., Secretary.

Association for the Study of Internal Secretions, Detroit, June 23. Dr. F. M. Pottenger, Monrovia, Calif., Secretary.

Association of American Physicians, Atlantic City, May 6-7. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.

Association of American Teachers of the Diseases of Children, Detroit, June 24. Dr. Ralph M. Tyson, 334 South 21st Street, Philadelphia, Secretary.

Conference of State and Provincial Health Authorities of North America, Washington, D. C., June 2-3. Dr. A. J. Chesley, State Board of Health, St. Paul, Minn., Secretary.

Connecticut State Medical Society, Hartford, May 21-22. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

District of Columbia, Medical Society of the, Washington, May 7-8. Dr. C. B. Conklin, 1718 M Street, N. W., Washington, Secretary.

Florida Medical Association, Pensacola, May 6-7. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Augusta, May 14-16. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.

Idaho State Medical Association, Coeur d'Alene, June 27-28. Dr. Joseph N. Davis, Kimberly, Secretary.

Illinois State Medical Society, Joliet, May 20-22. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Marshalltown, May 14-16. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Topeka, May 6-8. Dr. J. F. Hassig, Huron Building, Kansas City, Secretary.

Maine Medical Association, Portland, June 2-4. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Massachusetts Medical Society, Plymouth, June 17-18. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.

Medical Library Association, Montreal, June 24. Miss Sue Biethan, General Library, University of Michigan, Ann Arbor, Secretary.

Medical Women's National Association, Detroit, June 22-24. Dr. Elizabeth Kittredge, 3906 McKinley Street, Washington, D. C., Secretary.

Mississippi State Medical Association, Vicksburg, May 13-15. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

Missouri State Medical Association, Hannibal, May 12-15. Dr. E. J. Goodwin, 1023 Missouri Building, St. Louis, Secretary.

National Tuberculosis Association, Memphis, Tenn., May 7-10. Dr. C. J. Hatfield, Henry Phipps Institute, Philadelphia, Secretary.

Nebraska State Medical Association, Lincoln, May 13-15. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Concord, May 13-14. Dr. D. E. Sullivan, 7 N. State Street, Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, June 11-14. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.

New Mexico Medical Society, Raton, June 4-6. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.

New York, Medical Society of the State of, Rochester, June 2-5. Dr. Daniel S. Dougherty, 2 E. 103d Street, New York, Secretary.

North Dakota State Medical Association, Bismarck, May 27-28. Dr. Charles MacLachlan, San Haven, Secretary.

Ohio State Medical Association, Columbus, May 13-15. Mr. Don E. Martin, 131 East State Street, Columbus, Executive Secretary.

Oklahoma State Medical Association, Shawnee, May 26-28. Dr. Claude A. Thompson, Barnes Building, Muskogee, Secretary.

Rhode Island Medical Society, Providence, June 5. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.

South Carolina Medical Association, Florence, May 6-8. Dr. E. A. Hines, Seneca, Secretary.

South Dakota State Medical Association, Sioux Falls, May 20-22. Dr. John F. D. Cook, Langford, Secretary.

Texas, State Medical Association of, Mineral Wells, May 6-8. Dr. Holman Taylor, Medical Arts Building, Ft. Worth, Secretary.

West Virginia State Medical Association, White Sulphur Springs, May 20-22. Mr. Joe W. Savage, Box 1541, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American J. Dis. of Children, Chicago

39: 471-684 (March) 1930

*Determination and Regulation of Blood Clotting Function in Childhood. I. N. Kugelmass, F. W. Bancroft and M. Stanley-Brown, New York.—p. 471.

Influence of Feeding on Certain Acids in Feces of Infants: III. Comparison of Effects of Breast Milk and Whole Cow's Milk on Excretion of Volatile Acids and Lactic Acid. J. R. Gerstley, C. C. Wang and A. A. Wood, Chicago.—p. 487.

*Carbohydrate Metabolism of Normal New-Born Infant: II. Effect on Concentration of Blood Sugar of Feeding Various Sugars to New-Born Infants. H. M. Greenwald and S. Pennell, New York.—p. 493.

*Comparative Value of Toxoid and Other Agents in Immunization of Preschool Child Against Diphtheria. A. B. Schwartz and F. R. Janney, Milwaukee.—p. 504.

Dextrose Tolerance Tests Following Lobar Pneumonia in Children. J. L. Kohn and G. Felshin, New York.—p. 512.

*Renal Rickets. L. Schoenthal and C. Burpee, St. Louis.—p. 517.

*Treatment of Erysipelas in Infants. R. C. Eley, Boston.—p. 529.

*High Phosphorus Concentrations in Infantile Tetany. E. Marples and E. Crump, New York.—p. 536.

*Value of Vaccine in Prevention of Whooping Cough. R. P. Schowalter, Milwaukee.—p. 544.

*Digitalis Studies on Children with Heart Disease: III. Auricular Fibrillation in Children with Early Toxic Digitalis Manifestation. S. P. Schwartz, New York.—p. 549.

*Tetanus Neonatorum: Case with Recovery. E. A. Hines, Jr., Seneca, S. C.—p. 560.

Lipoid Histiocytosis (Niemann's Disease). J. M. Baty, Boston.—p. 573.

Dubois' Sequestra of Thymus Gland of Nonsyphilitic Origin. E. L. Benjamin, Chicago.—p. 586.

Acute Mediastinal Abscess. B. J. Malnekoff, Milwaukee.—p. 591.

Schilder's Disease (Encephalitis Periaxialis Diffusa). B. M. Gasul, Chicago.—p. 595.

Nils Rosén Von Rosenstein 1706-1773. J. Ruhräh, Baltimore.—p. 610.

Determination and Regulation of Blood Clotting Function in Childhood.—Kugelmass et al. make a preliminary report on their studies. They stress the dietary treatment of hemorrhagic diseases. Bleeders found deficient in fibrinogen or prothrombin were maintained on an acid-forming diet high in globulins, a protein intake of about 5 Gm. per kilogram of body weight. Bleeders found deficient in platelets were maintained on an acid-forming diet high in unsaturated lipins, i. e., constituting two thirds of the caloric intake. Patients the indexes of whose clotting functions were found to be high were maintained on a base-forming diet, consisting of 0.5 Gm. per kilogram of body weight, of fat as contained in the natural food without addition, and increased fluid intake.

Carbohydrate Metabolism of Normal New-Born Infant.—In eighteen infants the blood sugar concentration was followed by Greenwald and Pennell after a breast feeding during the first forty-eight hours of life; practically no increase in the blood sugar concentration occurred. This was most likely due to an insufficient secretion of breast milk during this period. In seven infants, the blood sugar curve after a breast feeding was studied from the first to the sixth day of life. A definite rise in the blood sugar concentration occurred in from one-half to one hour in practically all infants after the second day of life. From the curves obtained, it is concluded that the best tolerance is for lactose as it occurs in breast milk. Sixty infants were fed definite amounts of dextrose, lactose, saccharose and dextrimaltose; each sugar was administered to fifteen infants. The blood sugar curve after a dextrose meal is at a definitely lower level during the neonatal period than at any other period in life. The best rate of absorption occurred after the ingestion of dextrose, saccharose, lactose and dextrimaltose in the order in which they are named. The most irregular curves were obtained with dextrimaltose; with dextrose, saccharose and lactose fairly uniform curves were obtained.

Comparative Value of Toxoid and Other Agents in Immunization of Preschool Child Against Diphtheria.—The superiority of toxoid over other materials is strikingly demonstrated by the work done by Schwartz and Janney. In the preschool child, toxoid obtained from reliable sources offers the ideal method of diphtheria immunization, because (*a*) it gives a greater percentage of immunes than does toxin-antitoxin, and (*b*) it avoids serum sensitization. They urge that any program of diphtheria immunization should include proper performance of the Schick test. The best age for diphtheria immunization with toxoid is said to be about 1 year.

Renal Rickets.—Schoenthal and Burpee assert that two types of renal rickets may be distinguished: one due to congenital malformation of the kidney or urinary tract and another due to a chronic renal insufficiency of the character of a chronic interstitial nephritis, becoming manifest later in childhood. Detailed metabolic studies in a case of the first type, in a child aged 8 years, showed a negative total base balance, a negative calcium balance and a negative phosphate balance during certain periods. The blood changes were a moderately low total base, low bicarbonate, low protein, low calcium, high phosphate and high nonprotein nitrogen; both calculated and observed osmotic concentrations exceeded the normal. Chronic acidosis was present over a long time. Disodium phosphate administered to this patient was poorly absorbed and slowly excreted and resulted in a lowering of blood calcium with but a slight increase in blood phosphate. The effects were similar to those observed in genuine rickets. Sodium bicarbonate, administered by mouth, led to a positive base balance, although the calcium balance remained negative. The loss of calcium was chiefly by way of the bowel. The effect on the blood was an increase in phosphate, a decrease in calcium and an increase in the bicarbonate and total base. Calcium acetate, when administered by mouth, led to a decrease in blood phosphate and a slight increase in blood calcium. There was no appreciable effect on the bicarbonate or total base. The authors point out that the usual methods of treatment of rickets, such as the administration of vitamin D, are ineffective in the case of renal rickets. Replacement of the depleted base, calcium and phosphate is a logical method of treatment, although the effects are but temporary unless the treatment is continuous. This may be accomplished by the administration of an alkaline ash diet, together with calcium acetate.

Treatment of Erysipelas in Infants.—His experiences in thirty-three cases have convinced Eley that antistreptococcus erysipelas antitoxin is of definite value as a therapeutic measure in the treatment of infants, but it must be given within the first seventy-two hours of illness in order that the optimum effects may be obtained. The most noteworthy and consistent effect was the disappearance of toxicity, with general constitutional improvement.

High Phosphorus Concentrations in Infantile Tetany.—Eighty consecutive cases of infantile tetany occurring during a period of four and a half years are analyzed by Marples and Crump. Twenty cases, or 25 per cent, showed an inorganic phosphorus exceeding 7 mg. per hundred cubic centimeters of serum. The significance of these high phosphorus values has been briefly discussed. No distinctive clinical characteristics were observed that might differentiate the group with high concentrations of serum phosphorus from those with normal or low inorganic phosphorus values.

Value of Vaccine in Prevention of Whooping Cough.—Schowalter reports that a much lower whooping cough mortality existed from 1921 to 1928 as the result of vaccinotherapy than in the preceding eight years when vaccine was not used.

Auricular Fibrillation in Children with Early Toxic Digitalis Manifestation.—Schwartz states that digitalis is contraindicated in children with rheumatic fever and signs of cardiac insufficiency.

Tetanus Neonatorum.—Hines reports a case with recovery and ascribes the favorable outcome to the daily intramuscular injection of 2 cc. of a 25 per cent magnesium sulphate solution.

American J. Hygiene, Baltimore

11: 227-533 (March) 1930

*Intranuclear Inclusions in Yellow Fever. E. V. Cowdry, St. Louis, and S. F. Kitchen, New York.—p. 227.

*Properties of Yellow Fever Virus. M. Frobisher, Jr., New York.—p. 300.

Susceptibility of Capuchin (Cebus) Monkeys to Yellow Fever Virus. N. C. Davis, Bahia, Brazil.—p. 321.

Location of Yellow Fever Virus in Infected Mosquitoes and Possibility of Hereditary Transmission. N. C. Davis and R. C. Shannon, Bahia, Brazil.—p. 335.

*Self-Disinfecting Power of Skin as Defense Against Microbic Invasion. L. Arnold, C. J. Gustafson, T. G. Hull, B. E. Montgomery and C. Singer, Chicago.—p. 345.

Comparative Growths of Normal and Infusoria-Free Lambs. E. R. Becker and R. C. Everett, Ames, Iowa.—p. 362.

Intestinal Protozoa of Representative Sampling of Population of Wise County, Southwestern Virginia. E. C. Faust, New Orleans.—p. 371.

Plasmodium Elongatum N. Sp., Avian Malarial Organism with Elongate Gametocyte. C. G. Huff, Boston.—p. 385.

Epidemic of Influenza in Isolated Community, Northwest River, Labrador. W. G. Smillie, New York.—p. 392.

Toxin-Producing Capacities of Recently Isolated Strains of Diphtheria Bacilli. J. M. Neill, R. C. Avery, L. V. Richardson, J. Y. Sugg and B. E. Kane, Nashville, Tenn.—p. 399.

Effect of Local Ultraviolet Radiation on Resistance to Infection: B. Lepiseptícum Abscesses in Rabbit. J. Chapman and M. Hardy, Baltimore.—p. 404.

*Zebe-à-Pique as Malariacide in Grenada, B. W. I. J. Andrews, Baltimore.—p. 411.

Influence of Temperature, Hydrogen Ion Concentration and Oxygen Tension on Development of Eggs and Larvae of Dog Hookworm, Ancylostoma Caninum. O. R. McCoy, Baltimore.—p. 413.

Leukocyte Counts in Rabbits: Influence of Various Physiologic Factors in Pathologic Conditions. S. C. Cheng, Baltimore.—p. 449.

Intranuclear Inclusions in Yellow Fever.—Cowdry and Kitchen assert that their cytologic studies on the inclusions in experimental yellow fever in monkeys and in human cases of the disease supply information which shows that the nuclear response in yellow fever is of the same general type, though different in detail from that which occurs in many other virus diseases, especially chickenpox, herpes, virus III disease and submaxillary disease.

Properties of Yellow Fever Virus.—The material examined by Frobisher consisted of citrated blood from patients with yellow fever in Brazil, freshly drawn citrated or defibrinated blood of monkeys experimentally infected with yellow fever, and liver tissue taken from such monkeys after death. He was unable to demonstrate the constant presence of any particular micro-organism in the blood and liver of monkeys ill with, or dead of, yellow fever due to either of two strains of virus from Africa. The blood of human beings ill with yellow fever in Brazil and the blood of monkeys having yellow fever due to either of two strains of virus from South America have likewise failed to yield any particular organism on cultivation. Guinea-pigs inoculated with yellow fever blood virus of African and South American strains have later shown no unusual resistance to infection with *Leptospira icteroides*. Nor was he able to demonstrate any significant skin reactions by the intracutaneous injection of various yellow fever serums, a tissue extract and fresh virus blood into sick, recovered and normal monkeys.

Self-Disinfecting Power of Skin as Defense Against Microbic Invasion.—The work done by Arnold et al. tends to prove that human skin possesses a self-disinfecting power. The intact cornified outer layer of the skin is an important first line of defense against bacterial invasion. Dirty or fat covered skin can have viable bacteria on it for many hours. When the fatty secretions of the skin are removed from the stratum corneum, this layer rapidly and efficiently disinfects itself. Such fat covered skin areas can play an important rôle in passively transmitting by contact disease-producing microbes. The nail region of the tips of the fingers is an exception to self-disinfection.

Zebe-à-Pique as Malariacide in Grenada.—Zebe-à-pique is the local Grenadian name for the bastard cedar bush. Andrews tested the efficacy of this reputed remedy in the treatment of malaria. In no case in which zebe-à-pique was administered was there any perceptible diminution in the number of parasites, nor was the fever checked within four days of beginning the administration of an extract. On the other hand, six patients treated with quinine responded uniformly to treatment.

American J. Obstet. & Gynecology, St. Louis

19: 299-456 (March) 1930

*Fetal Bacteremia; Contribution to Mechanism of Intra-Uterine Infection and to Pathogenesis of Placentitis. A. J. Kobak, Chicago.—p. 299.

*Physiology of Uterus in Labor. L. Rudolph and A. C. Ivy, Chicago.—p. 317.

*Early Diagnosis of Pregnancy, Chorionepithelioma and Hydatidiform Mole by Aschheim-Zondek Test. S. Aschheim, Berlin, Germany.—p. 335.

*Serum Proteins in Toxemias of Pregnancy. N. J. Eastman, Baltimore.—p. 343.

*Comparative Study of Anterior Hypophyses in Pregnant and Nonpregnant States. A. R. Bacon, Chicago.—p. 352.

Cecum Mobile. A. Crotti, Columbus, Ohio.—p. 356.

Treatment of Fibroids. W. C. Danforth and R. M. Grier, Evanston, Ill.—p. 367.

*Cistern Puncture in New-Born. L. H. Smith, Portland, Ore.—p. 374.

*Analysis of Operative Results in 1,066 Cases of Salpingitis. A. H. Aldridge, New York.—p. 381.

*Analysis of Cesarean Sections Performed in Los Angeles from 1923 to 1928, Inclusive. W. B. Thompson, Los Angeles.—p. 392.

Reproductive Phenomena in Monkey, Macacus Rhesus. C. G. Hartman, Baltimore.—p. 405.

Fetal Bacteremia: Contribution to Mechanism of Intra-Uterine Infection and to Pathogenesis of Placentitis.—Three hundred and seventy-four consecutive fetal blood cultures, aseptically drawn from the umbilical cord during the third stage of labor, were subjected to routine studies by Kobak. Thirty-four, or approximately 9 per cent. were positive. It was shown that the fetus may have a temporary bacteremia without any untoward effects. The bacteremia occurs in the fetus frequently as an ascending infection after a prolonged rupture of the bag of waters. The infection route is through the vagina and amniotic fluid and is then transplacental. The maternal blood stream can likewise transmit diseases or foci of infection to the fetus transplacentally.

Physiology of Uterus in Labor.—Rudolph and Ivy report observations on, first, the mechanism of labor in the dog studied under direct vision; second, the effect of stimulation and section of the extrinsic nerves of the uterus in the rabbit and the dog; third, the effect of certain drugs on the uterus in situ by the use of a method that graphically records uterine motility; fourth, the experimental rupture of the uterus in the dog.

Early Diagnosis of Pregnancy, Chorionepithelioma and Hydatidiform Mole by Aschheim-Zondek Test.—This report by Aschheim is a summary of previous reports and also confirms the observations of others with this test.

Serum Proteins in Toxemias of Pregnancy.—Eastman's results disagree with those of certain European workers, who find decided alterations in the serum proteins in pregnancy and assign to them a causative rôle in the production of eclampsia.

Anterior Hypophyses in Pregnant and Nonpregnant States.—Bacon attempted to show what relation exists between the hormone content of pregnant and nonpregnant anterior hypophyses by the method of implantation into infantile female white mice. It was found that the pregnant hypophyses were poorer in hormone than the nonpregnant ones, although the hormone content of the pregnant blood is vastly greater. This is possibly explained by a reduced activity brought about by a vicarious hormone production in the decidua and as analogous to the disappearance of female sex hormone from the corpus luteum of pregnancy with the increase of hormone production by the placenta.

Cistern Puncture in New-Born.—Smith believes that the pediatrician has been rather hasty in condemning the obstetrician for the presence of blood in the cerebrospinal fluid of the newborn. In the average case of childbirth with ordinary conservative obstetric intervention, the presence or absence of blood in the cistern fluid is probably dependent on factors that predispose all new-born infants to bleed easily. The fact that in repeated taps in the same infants blood disappears proves in itself that the clear blood or any red cells present in the first tap cannot be ascribed to accidental injury and thus interpreted as contamination.

Analysis of Operative Results in One Thousand and Sixty-Six Cases of Salpingitis.—Aldridge presents statistics to show that abdominal operations for salpingitis while the infection is still active are accompanied by an unjustifiable mortality, excessive morbidity, especially from shock, sepsis and

defective wound healing, a high percentage of radical surgery and disappointing end-results. He urges that patients who have pelvic infections should be allowed long periods of convalescence and palliative treatment. If after such treatment spontaneous cures do not occur and operations eventually become necessary, the results will show a minimum percentage of mortality and morbidity, and a maximum percentage of conservative surgery and satisfactory end-results. If operation seems unavoidable after a prolonged period of convalescence and palliative treatment, a cure by laparotomy should not be attempted until the inflammatory exudate about the focus of infection has been absorbed and the leukocyte count, temperature and sedimentation time are normal. Drainage of the peritoneal cavity by the vaginal route is superior to other methods. By this method the period of postoperative morbidity from delayed wound union and the incidence of postoperative incisional hernias are materially decreased.

Analysis of Cesarean Sections Performed in Los Angeles from 1923 to 1928 Inclusive.—Thompson has reviewed 1,322 cesarean sections, 1,060 classic and 262 low cervical, performed in twelve Los Angeles hospitals in the years 1923 to 1928 inclusive. The mortality was 4.2 per cent. He says that there is much to be criticized in the performance of cesarean sections without adequate indications, in the large number of poorly written records, and in the failure to exercise proper obstetric judgment as to the type and time of operation, the anesthetic and the general care of patients who properly should be operated on.

American J. Ophthalmology, Chicago

13: 187-284 (March) 1930

Epibulbar Basal Cell Carcinoma with Penetration of Globe: Case. B. W. Key, New York.—p. 187.
Subhyaloid Hemorrhage. F. O. Schwartz, St. Louis.—p. 195.
Lesions of Chiasmal Region. C. B. Walker, Los Angeles.—p. 198.
Recent Advances in Ophthalmology. S. H. McKee, Montreal.—p. 209.
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Whisker in Cornea. J. J. Horton, San Angelo, Texas.—p. 226.
Inexpensive Light for Retinoscopy. J. J. Horton, San Angelo, Texas.—p. 227.

American J. Roentgenol. & Rad. Therapy, New York

23: 241-352 (March) 1930

Roentgenologic Diagnosis of Diseases of Upper Respiratory Tract in Children. H. K. Pancoast and E. P. Pendergrass, Philadelphia.—p. 241.
Clinical and Roentgenologic Consideration of Pulmonary Infarction. B. R. Kirklin and L. S. Faust, Rochester, Minn.—p. 265.
*Tuberculous Mediastinitis. K. Kornblum and D. A. Cooper, Philadelphia.—p. 276.
Chronic Discharging Sinuses: Visualization on Roentgenograms. P. A. Bishop, Philadelphia.—p. 286.
*Systemic Effect of Roentgen Rays: I. Blood Chemical Changes in Dogs Following Exposure to Filtered Roentgen Rays of Short Wavelength. E. A. Pohle and E. L. Sevringhaus, Madison, Wis.—p. 291.
*Experimental Investigation of Lead Therapy. F. C. Wood, New York.—p. 299.
*Lead Therapy. L. C. Knox, New York.—p. 304.
Lead Therapy. H. J. Ullmann, Santa Barbara, Calif.—p. 306.
Lipoma of Colon: Two Cases. W. H. Stewart and H. E. Illick, New York.—p. 308.

Tuberculous Mediastinitis.—Five cases of tuberculosis occurring in adults in which the disease was predominant in the mediastinum are reported by Kornblum and Cooper. The clinical aspects and roentgenologic signs were those of mediastinal involvement. Attention is called to this localization of the disease as a distinct clinical entity. The importance of tuberculous mediastinitis in the differential diagnosis of mediastinal disease is emphasized.

Systemic Effect of Roentgen Rays.—Fourteen dogs were exposed by Pohle and Sevringhaus to filtered roentgen rays of short wave length over the anterior and posterior lower part of the body, over the posterior part alone, and over the posterior upper chest. The dose amounted to 500 r units (air value); the surface dose to approximately 600 r per field. Six additional dogs served as controls. The hemoglobin, the total nonprotein nitrogen, the uric acid, the sodium chloride and the cholesterol in the blood did not show any characteristic changes following irradiation. There existed no apparent relation between the dose, the part of the body exposed, and the effect.

Experimental Investigation of Lead Therapy.—Wood says that the mere fact that Blair Bell has a certain number of well observed and completely arrested cases of carcinoma and sarcoma in which the growth has receded under treatment with lead alone cannot be discounted because of the failure of other workers in the field to obtain satisfactory results, nor can the weight of observations in human cases be diminished by the fact that the lead is not effective as a cure of animal tumors. He has treated about seventy patients without a single death from the lead itself. Unfortunately most of them have died from the progress of their disease, though in a few patients the tumors have been arrested.

Lead Therapy.—Knox's experience in about seventy cases has convinced her that colloidal lead has been effective in prolonging the lives of some patients with malignant disease. A rare but occasional permanent cure may be expected. In general, a patient should be relatively young, not anemic or cachectic or with extensive metastases, in order to undertake the treatment. The morphology of the tumor is not a guide to the probability of its susceptibility to lead. A combination of roentgen rays and of lead has probably more effect on the neoplasm than either of these used alone. The treatment is too prostrating and may be too hazardous to justify its use as a prophylactic measure.

American J. Surgery, New York

8: 239-459 (Feb.) 1930

Conduction Anesthesia for Minor Surgery. G. P. Pitkin, Bergenfield, N. J.—p. 239.
Use and Abuse of Antiseptics. Z. Cope, London, England.—p. 264.
Dislocations of Shoulder. E. Rixford, Stanford University, Calif.—p. 268.
Simplified Technic for Intratracheal Injection of Iodized Oils (Lipiodol). A. L. Soresi, New York.—p. 272.
Burns. E. R. Schmidt, Madison, Wis.—p. 274.
Pessaries in Gynecology. G. W. Phelan, New York.—p. 276.
Wet and Dry Dressings: When and How to Use Them. C. L. Hoag, San Francisco.—p. 283.
Office Laboratory for Surgical Practitioner. M. Lederer, New York.—p. 285.
Office Treatment of Urinary Tract in Women. H. D. Furniss, New York.—p. 289.
Surgical Conditions of Eye. W. L. Benedict, Rochester, Minn.—p. 292.
Bleeding from Vagina. M. V. Armstrong, New York.—p. 295.
Varicose Veins: Cause and Treatment. W. H. Barnes, Oakland, Calif.—p. 297.
Infection of Hand and Fingers. C. Beck, Chicago.—p. 301.
Practical Points in Management of Gonorrhea in Women. C. A. Gordon, New York.—p. 304.
Webbed Fingers. J. H. Woolsey, San Francisco.—p. 307.
Cervical Lacerations and Infections. G. Gibson, New York.—p. 309.
Defects of Toe Nails (Ingrown and Vertical). A. A. Thurlow, Santa Rosa, Calif.—p. 312.
Rational Uses of Physical Energies in Otorhinolaryngology. A. R. Hollender, Chicago.—p. 315.
Sedimentation Test: Substitute for Leukocyte Count. D. Tollefson, Los Angeles.—p. 322.
Removal of Foreign Bodies from Hands, Fingers and Feet. D. Goldblatt, New York.—p. 324.
Indications for Doing a Meatotomy and Simple Technic That Can Be Done in Office. G. F. Schenck, Los Angeles.—p. 328.
Treatment of Paraphimosis. G. F. Schenck, Los Angeles.—p. 329.
Tuberculous Lymph Nodes. P. A. Wade, New York.—p. 330.
Bunion and Hallux Valgus. A. J. Buka, Pittsburgh.—p. 332.
Wounds of Scalp and Face. E. Butler, San Francisco.—p. 336.
Treatment of Granulating Wounds with Delayed Healing. N. W. Cornell, New York.—p. 338.
Rôle of Local Anesthesia in Office Practice. R. E. Farr, Minneapolis.—p. 340.
Prevention of Cicatricial Contractions. J. H. Garlock, New York.—p. 344.
Office Technic of Cervical Biopsy. M. Glass, New York.—p. 346.
Bubo. H. H. Goldstein, Newark, N. J.—p. 347.
Minor Surgery of Anorectal Region. L. J. Hirschman, Detroit.—p. 349.
Tonsillar Electro-Enucleation Versus Tonsillar Coagulation. F. P. Herman, West Palm Beach, Fla.—p. 353.
Office Treatment of Hematoma. V. Hurley, New York.—p. 358.
Thermal and Chemical Injuries. A. Karsted, Butte, Mont.—p. 360.
Surgical Conditions of Ear. S. J. Kopetzky, New York.—p. 361.
Sebaceous Cysts. M. C. Lile, Seattle.—p. 364.
Treatment of Flat Feet. H. M. Markel, San Francisco.—p. 365.
Minor Pathology of Vulva. C. J. Miller, New Orleans.—p. 368.
Collodion Treatment of Boils and Carbuncles. W. J. Robbins, New Britain, Conn.—p. 371.
How to Remove Ocular Foreign Bodies. R. M. Rogers, New York.—p. 373.
Subcutaneous Foreign Bodies in Minor Surgery. G. K. Rhodes, San Francisco.—p. 376.
Stricture of Urethra. C. Rusche, Hollywood, Calif.—p. 377.

Electrosurgical Gynecologic Office Procedures. G. E. Ward, Baltimore.—p. 379.
Injection Treatment of Varicose Veins. L. H. Edmunds, Seattle.—p. 381.
Treatment of Fractures of Fingers and Toes. C. R. G. Forrester and F. R. McLean, Chicago.—p. 384.
Simple Balanitis. F. S. Dillingham, Los Angeles.—p. 386.
Dirty Wounds. H. Stimson, Chicago.—p. 387.
Scalp Burns in Women. R. T. Findlay, New York.—p. 389.
Management of Conjunctivitis. H. S. Gradle, Chicago.—p. 396.
Stenosis of Cervix. W. R. Cooke, Galveston, Texas.—p. 399.
Tonsillectomy in Office. W. W. Pearson, Des Moines, Iowa.—p. 401.
Urethral Caruncle. P. A. Ferrier, Pasadena, Calif.—p. 403.
Intravenous Urography by Means of Uroselectan. M. Swick, New York.—p. 405.
Roentgen Study of Apical Chest Tumors. W. F. Henderson, New Orleans.—p. 414.
Practical Conclusions as to Nature and Behavior of Grenz Rays (Bucky). M. B. Spiethoff, Jena, Germany.—p. 421.
Endotheliomyeloma of Pubis with Generalized Metastases. C. M. Gratz, New York.—p. 424.
Roentgenographic Visualization of Appendical Perforation. J. A. Avellán, Havana, Cuba.—p. 427.
Congenital Radio-Ulnar Synostosis. E. S. Blaine, Chicago.—p. 429.
Head Sling Traction Technic in Cervical Spine Roentgenography. P. Lewin, Chicago.—p. 434.

American J. Tropical Medicine, Baltimore

10: 83-163 (March) 1930

*Recoveries from Leprosy. O. E. Denney, R. Hopkins and F. A. Johansen.—p. 83.
*Symptom, Diarrhea: I. Relation to Flagellate Infestation. T. B. Magath and P. W. Brown, Rochester, Minn.—p. 113.
Endameba Coli Index of E. Histolytica in Community. E. C. Faust, New Orleans.—p. 137.
Released Stegomyia Aegypti (L): Dispersion. R. C. Shannon, A. W. Burke and N. C. Davis, Bahia, Brazil.—p. 145.
Flight of Stegomyia Aegypti (L.). R. C. Shannon and N. C. Davis, Bahia, Brazil.—p. 151.

Recoveries from Leprosy.—Crude chaulmoogra oil administered orally and intramuscularly has been the remedy most continuously taken by the largest number of the sixty-five paroled patients cited by Denney et al.

Symptom, Diarrhea: Relation to Flagellate Infestation.—A study of sixty patients infested only with *Chilomastix mesnili* and of 267 patients infested with *Giardia lamblia* has convinced Magath and Brown that diarrhea is probably most often explainable on the basis of improper food or infection with certain bacteria, or perhaps some as yet unknown abnormal physiologic state. Scientific proof is said to be lacking for maintaining that intestinal flagellates cause diarrhea.

Annals of Internal Medicine, Ann Arbor, Mich.

3: 883-968 (March) 1930

*Herpes Zoster and Angina Pectoris. A. E. Parsonnet, Newark, N. J., and A. S. Hyman, New York.—p. 883.
*Poliomyelitis Versus Landry's Paralysis. H. C. Gordinier, Troy, N. Y.—p. 892.
*Agranulocytosis: Five Cases with Two Recoveries. J. M. Hutcheson, Richmond, Va.—p. 904.
Newer Methods in Tuberculosis Therapy. B. Goldberg, Chicago.—p. 910.
*Ophthalmoplegia and Exophthalmic Goiter. J. L. Garvey, Milwaukee.—p. 917.
Hemorrhagic Nephritis. J. P. O'Hare and E. J. Kirk, Boston.—p. 920.
Arachnidism: Five Cases. J. B. Ellis, Helena, Ark.—p. 924.
Medical Genius and Contemporary Criticism. W. F. Harrison, Montreal, Canada.—p. 928.

Herpes Zoster and Angina Pectoris.—Three patients with herpes zoster who subsequently developed angina pectoris and died of coronary artery disease are presented by Parsonnet and Hyman. They state that the characteristic burning pain experienced in herpes zoster resembles in many respects that of angina pectoris. Patients may confuse the two. Herpes zoster and angina pectoris exhibit identical zonal areas of altered skin sensitivity. There is a possibility of a common etiologic background in both herpes zoster and angina pectoris of the neurogenic type.

Poliomyelitis Versus Landry's Paralysis.—Gordinier lays especial emphasis on the absence in his case and in two others studied, together with many of the recorded cases of the Landry symptom complex in the literature, of the mononuclear round cell infiltration of the pia, vascular walls and gray matter that is so characteristic pathologically of poliomyelitis. Gordinier feels that these cases cannot be designated either on clinical or on pathologic evidence as the adult type of poliomyelitis or multiple neuritis. The symptom complex known as Landry's paralysis seems to be due to some as yet unknown infectious process that has a special predilection for the peripheral motor neurons.

Agranulocytosis.—If the diagnostic criteria laid down by Schultz were strictly adhered to, Hutcheson says that only two of the four cases he reports could properly be included under the term agranulocytic angina for the reason that no necrotic or ulcerative throat lesions were demonstrable and in two there was recovery. There is no agreement among writers on the subject that the throat lesions are an essential part of the picture or that they bear any etiologic relation to the fever and blood reaction. The fact that they often appear after fever and blood changes are well established would indicate that they are secondary, and this view is held by a number of observers. In one case enlarged spleen, secondary anemia, agranulocytic leukopenia and rectal ulceration were observed before the onset of fever. There was a history of an acute illness with fever and jaundice six weeks previously, but no blood examination was made at this time. It seems likely that temporary improvement had taken place, with relapse later and death. In another case of this series there was rather severe sore throat beginning several days after the onset of illness and, though no ulceration was seen, it is readily conceivable that ulceration and necrosis might have appeared had recovery been postponed a few days longer. The most striking feature in the two cases of recovery was the prompt rise in leukocytes, chiefly in granular cells, which occurred with the crisis-like fall in temperature.

Ophthalmoplegia and Exophthalmic Goiter.—A case of exophthalmic goiter with external ophthalmoplegia preceding the other signs and symptoms is recorded by Garvey. The close relationship between myasthenia gravis and exophthalmic goiter from the clinical and pathologic standpoint is noted. Myasthenia gravis and exophthalmic goiter present many clinical and pathologic features in common. Both may exhibit extreme myasthenia and ocular palsies and pathologically show lymphorrhagic infiltration of the muscles and other evidence of thymicolymphatic constitution. The preponderance of evidence in both conditions points to the likelihood of a tendency to an endocrine dysfunction, possibly of congenital thymic origin. The essential difference in the clinical picture between exophthalmic goiter with ophthalmoplegia and myasthenia gravis is the difference in the basal metabolic rate.

Archives of Surgery, Chicago

20: 543-712 (April) 1930

Recognition of Elephantiasis and Elephantoid Conditions by Soft Tissue Roentgenograms. F. L. Reichert, San Francisco.—p. 543.
*Gelatinous Carcinoma of Breast. G. L. Cheatle, London and M. Cutler, New York.—p. 569.
*Goiter: Management of Poor Surgical Risk. J. DeJ. Pemberton, Rochester, Minn.—p. 591.
Thoracic Sympathetic Cardiac Nerves in Man: Relation to Cervical Sympathetic Ganglionectomy. A. Kuntz and A. Morehouse, St. Louis.—p. 607.
*Neuropathies of Bones and Joints: Case of an Arthropathy of Ankle Due to Peripheral Nerve Lesion. A. R. Shands, Jr., Durham, N. C.—p. 614.
Genital Prolapse Following Total Hysterectomy: Successful Operative Procedure. R. L. Payne, Norfolk, Va.—p. 637.
Chronic Idiopathic Duodenal Ileus Associated with Hyperthyroidism. G. L. McWhorter, Chicago.—p. 643.
Tuberculous Peritonitis. R. L. Faulkner and H. S. Everett, Baltimore.—p. 664.

Gelatinous Carcinoma of Breast.—Cheatle and Cutler noted that gelatinous degeneration is more common in carcinoma of the breast than is generally supposed. The process of gelatinous degeneration begins and ends in the epithelium only. The areas in which gelatinous degeneration appears to have infiltrated the connective tissue stroma of the breast consist of the remains of degenerated epithelium which has disappeared completely, leaving only a gelatinous meshwork. This gelatinous degeneration begins and ends in epithelium confined within ducts and acini and also affects the epithelium that has invaded normal structures. The presence of gelatinous degeneration in a carcinoma of the breast does not necessarily imply a low degree of malignancy, as is generally supposed. Carcinomas of the breast exhibiting gelatinous degeneration often possess a com-

paratively low degree of malignancy. The clinical course of tumors exhibiting gelatinous degeneration is determined chiefly by the precise biologic properties of the epithelial elements they contain and does not depend on either the presence or the extent of the gelatinous degeneration.

Goiter: Management of Poor Surgical Risk.—By contrasting the records of a large series of patients with exophthalmic goiter who were operated on after having taken iodine with a similar series of patients operated on without having taken iodine, the effect of iodine treatment was determined by Pemberton. The practical elimination of the need for preliminary ligations and the remarkable decrease in the mortality rate from 4.1 to 0.9 per cent are outstanding. Furthermore, by greatly reducing the incidence and severity of the postoperative reactions, the most uncertain of the operative hazards, iodine medication has made it possible to evaluate more accurately other factors that influence the surgical mortality rate. The duration and severity of the hyperthyroidism, as measured by the height of the basal metabolic rate and the age of the patient, were proved to be significant influences in the surgical hazard of all patients with toxic goiter. Other obvious factors that affect the mortality rate unfavorably are visceral degeneration and intercurrent diseases. By proper evaluation of these potential dangers, the surgeon is today enabled to predetermine with a reasonable degree of accuracy the surgical hazard of the individual patient with goiter. By means of this ability to measure the hazard, it is possible to estimate the small group of patients from which the mortality is likely to be derived, and to limit the application of any additional measures of treatment needed by the handicapped patient. The success of the operative treatment of the patient who is a poor risk is largely dependent on the avoidance of prolonged general anesthesia and of technical errors. The indications for the employment of ligation and lobectomy are limited. Close supervision is the watchword of the postoperative care of the handicapped patient, for much can be accomplished if complications are detected early and treated intelligently. Treatment by oxygen in the chamber or tent, if instituted early, is a valuable measure in postoperative pulmonary edema, pneumonia and respiratory obstruction.

Arthropathy of Ankle Due to Peripheral Nerve Lesion.—A classification of the neuropathic lesions of the bones and joints is presented by Shands and a case of neuropathic arthropathy of the ankle is reported. The etiologic factor in this case appears to have been a peripheral nerve lesion, as the posterior tibial nerve was found to terminate in scar tissue above the joint.

Arkansas M. Soc. Journal, Little Rock

26: 199-212 (March) 1930

Practical Blood Chemistry. M. J. Kilbury, Little Rock.—p. 199.
Prevalence and Prevention of Deafness. R. B. Moore, Little Rock.—p. 203.

California & Western Medicine, San Francisco

32: 145-216 (March) 1930

Aschheim-Zondek Test for Pregnancy: Present Status. H. M. Evans and M. E. Simpson, Berkeley.—p. 145.
Future of Medical Practice—Medical Service Organizations. C. M. Cooper, San Francisco.—p. 148.
Eczema—Recent Contributions to Its Study. S. Ayres, Jr., Los Angeles.—p. 153.
Capsulotomy Method of Lens Expression. D. F. Harbridge, Phoenix, Ariz.—p. 158.
Bladder Care After Abdominal Operations. R. G. Craig, San Francisco.—p. 162.
Urology: General Observations. W. B. Parker, Los Angeles.—p. 165.
Long Wave Roentgen Rays in Dermatology. L. R. Taussig, San Francisco.—p. 166.
Bronchopneumonia in Early Childhood: Treatment. E. P. Cook, San Jose.—p. 170.
Surgical and Nonsurgical Facial Neuralgias. M. A. Glaser, Los Angeles.—p. 174.
Tuberculosis in School Children. E. W. Hayes, Monrovia.—p. 178.
Hippocratic Medicine. L. Porter, San Francisco.—p. 181.
*Rare Sequel to Gastro-Enterostomy: Case. E. E. Larson, Woodland.—p. 183.
Specific Gravity of Blood. J. M. Askey, Los Angeles.—p. 184.
Surgical Treatment of Staphylococcus Meningitis. G. H. Sciaroni, Fresno.—p. 186.

Rare Sequel to Gastro-Enterostomy.—Larson reports the case of a man, aged 41, on whom a posterior, retrocolic, retroperistaltic, short-loop gastro-enterostomy was done for duodenal ulcer. The proximal jejunal loop was 4 or 5 inches in length. The mesocolon was sutured by interrupted chromic sutures to the stomach wall above the gastro-enterostomy stoma. The patient made an uninterrupted recovery. Forty-one days following the gastro-enterostomy the patient was seized by an excruciating pain in the epigastrium, followed by copious vomiting which contained no blood. The pain and vomiting continued four hours. On examination, the scar from the former incision seemed normal. There was noted a fulness in the upper left abdominal quadrant. On close inspection, it was seen that this fulness was getting larger rapidly, with the patient complaining of an oncoming cramp that grew progressively worse within the next minute until the pain became almost unbearable. With a stethoscope a gurgling was heard, following which the tumor mass disappeared and the pain ceased. A diagnosis of intestinal obstruction, incident to the gastro-enterostomy, was made. At operation it was found that no adhesions existed between the former operative scar and the viscera. The mass in the left upper quadrant consisted of edematous loops of jejunum and ileum which had become strangulated following migration through the artificial aperture always resultant on gastro-enterostomy, the boundaries being the ligament of Treitz, the mesocolon, the stomach and the anastomosis. The loops were easily pulled back through the stoma and replaced in their normal position. No injury was done to the anastomosis. Four interrupted chromic catgut sutures were then used to close the opening. The patient made an uneventful recovery and has remained well.

Canadian M. Assn. Journal, Toronto

22: 311-464 (March) 1930

Surgery of Biliary Tract. J. A. C. Forsyth, London.—p. 311.
Etiology of Acute Appendicular Disease. D. P. D. Wilkie, Edinburgh.—p. 314.
Appendicitis: Review of 500 Cases. M. H. V. Cameron, Toronto.—p. 317.
*Chronic Arthritis. A. A. Fletcher, Toronto.—p. 320.
Differential Diagnosis of Superficial Glandular Swellings. D. Graham, Toronto.—p. 324.
Massive Collapse of Lung. H. H. Murphy, Kamloops, B. C.—p. 327.
*Diagnosis of Renal Glycosuria. I. M. Rabinowitch, Montreal.—p. 329.
Relationship Between Clinical and Pathologic Findings in Primary Pulmonary Malignancy. R. Paterson, Toronto.—p. 333.
Hospital Situation in England. J. H. Elliott, Toronto.—p. 337.
Bacteriology of Thyroid in Goiter. A. Cantero, Montreal.—p. 343.
Tuberculosis in Nurses. E. L. Ross, Ninette.—p. 347.
Hypopituitarism: Its Sexual Manifestations. N. E. Berry, Montreal.—p. 354.
Recent Advances in Renal Surgery of Childhood. R. I. Harris, Toronto.—p. 358.
Traumatic Rupture of Urethra and Bladder. G. S. Foulds, Toronto.—p. 365.
Suction Drainage in Empyema. K. D. Panton, Vancouver.—p. 368.
Method of Transcervical Drainage in Purulent Infections of Pelvis Requiring Supravaginal Hysterectomy. L. Gérin-Lajoie, Montreal.—p. 375.
Ovarian Pregnancy. J. R. Goodall and P. J. Kearns, Montreal.—p. 378.
Hematosalpinx Simulating Appendicitis in Flat Pelvis at Eight and One-Half Months of Pregnancy: Case. W. J. Stevens, Ottawa.—p. 379.
Solitary Cyst of Kidney. C. W. Burns, Winnipeg.—p. 380.
Diathermy in Treatment of Dacryocystitis. J. Hunter, Toronto.—p. 381.

Chronic Arthritis.—Fletcher is of the opinion that in cases of chronic arthritis in which the disease is secondary to a focus of infection, it is probable that malnutrition at times creates the state favorable to the development of this infectious process. In other cases the colon itself is probably the source of the infectious or toxic agent causing the disease.

Diagnosis of Renal Glycosuria.—Rabinowitch stresses the point that a person with glycosuria should be regarded as diabetic until proved otherwise. He cites one case. Sugar was accidentally discovered in the urine of this patient. There were no signs or symptoms to suggest diabetes at the time of the discovery of the sugar. There was no family history of diabetes. The daily blood sugars were normal, in the fasting state, though sugar was persistently found in the urine during these periods. The blood sugar time curve obtained after dextrose ingestion was normal, except for the glycosuria. Daily observation with increasing quantities of carbohydrate food showed that there was no relationship between the amount of

sugar ingested and excreted. The amount excreted was small. There was no polyuria. The respiratory metabolism was normal, and lastly, after twenty years of glycosuria, with no alteration whatever in his dietary habits, the patient did not develop any signs or symptoms of diabetes. A diagnosis of renal glycosuria was therefore made in this case.

Canadian Public Health Journal, Toronto

21: 105-156 (March) 1930

Acute Endemic Upper Respiratory Diseases. J. A. Doull, Baltimore.—p. 105.
Vitamins. C. H. Best and E. W. McHenry, Toronto.—p. 119.
Venereal Disease Survey in Toronto. C. P. Fenwick, Toronto.—p. 132.
Trend of Public Health in Saskatchewan. F. D. Munroe, Saskatchewan.—p. 139.

Delaware State M. Journal, Wilmington

2: 39-58 (March) 1930

Diagnosis of Malignancy. J. Eiman, Philadelphia.—p. 39.
Cancer in Delaware. A. C. Jost, Dover.—p. 46.

Endocrinology, Los Angeles

14: 1-76 (Jan.-Feb.) 1930

*Morphologic Changes in Endocrine Glands in Mongolian Idiocy: Two Cases. M. B. Gordon, New York.—p. 1.
Sedimentation of Erythrocytes in Endocrinopathies. E. Bonilla and A. Moya, Madrid, Spain.—p. 7.
Effect of Castration on Proliferative Activity and Structure of Thyroid Gland in Guinea-Pigs. K. S. Chouke, St. Louis.—p. 12.
*Occurrence of Yeasts in Patients with Thyroid Disease. J. A. Buchanan, New York.—p. 17.
Distribution and Preparation of Ovarian Follicular Hormone. J. A. Morrell, E. W. McHenry and H. H. Powers, New Brunswick, N. J.—p. 25.
*New Source of Ovarian Follicular Hormone. J. A. Morrell, H. H. Powers and J. R. Varley, New Brunswick, N. J.—p. 28.

Morphologic Changes in Endocrine Glands in Mongolian Idiocy.—The microscopic changes in the endocrine glands of two mongolian idiots are reported by Gordon. In the first, aged 14 months, the changes consisted of cirrhosis and dysfunction of the thyroid gland, physiologic involution of the suprarenal cortex with hypoplasia of the chromaffin substance, a normal pineal gland except for the presence of a cyst lined by glia cells, and a normal pituitary gland and ovary. The second patient, aged 6 weeks, presented the following changes: cirrhosis and dysfunction of the thyroid gland; physiologic involution of the suprarenal cortex and hypoplasia of the chromaffin portion; retrogressive changes in Hassel's bodies with an increase in number; hypoplasia of the thymus cortex; incipient atrophy of the anterior lobe of the pituitary gland, and a normal pineal gland.

Occurrence of Yeasts in Patients with Thyroid Disease.—Buchanan asserts that all types of thyroid disease are associated with fermentation by yeasts. Yeasts may be found in all patients when proper cultures are made. The results of iodine and other types of therapy that are inhibitive in alcoholic fermentation indicate their presence to be causal factors of the disease with which their association can be demonstrated. Iodine in proper amounts prevents the excessive multiplication of yeasts in the soil, and thereby lessens food contamination.

New Source of Ovarian Follicular Hormone.—Morrell et al. found that the fetal fluid of cattle, both amniotic and allantoic, contained large amounts of the follicular hormone present in the ovary.

Florida M. Assn. Journal, Jacksonville

16: 399-430 (March) 1930

Problem of Insect-Borne Diseases in South America. H. Hanson, Jacksonville.—p. 399.
Review and Observation of Hydrophobia; Case. C. C. Webb, Pensacola.—p. 401.
Tularemia: Case. C. J. Marshall, Sanford.—p. 403.
Preventive Pediatrics. C. H. Farmer, Lakeland.—p. 404.

Georgia M. Assn. Journal, Atlanta

19: 85-127 (March) 1930

Preparation of Medical Papers. L. M. Blackford, Atlanta.—p. 85.
Delay in Diagnosis of Pulmonary Tuberculosis. E. W. Glidden, Alto.—p. 90.
Basal Lesions of Lungs. J. C. Burch, Alto.—p. 92.
Coronary Thrombosis. H. I. Reynolds, Athens.—p. 93.
Practical Use of Electrocardiograph. J. C. Massee, Atlanta.—p. 98.
Electrocardiographic Method in Diagnosis. V. E. Powell, Atlanta.—p. 100.
Treatment of Malaria. R. A. Hill, Thomasville.—p. 102.

Indiana State M. Assn. Journal, Fort Wayne

23: 113-162 (March 15) 1930

Hypertension in Relation to Industrial Employment. J. O. Ritchey, Indianapolis.—p. 113.
Management of Goiter. F. H. Lahey, Boston.—p. 117.
Bronchoscopy in Lung Suppuration. D. O. Kearby, Indianapolis.—p. 122.
Treatment of Scirrhous and Obstructive Lesions of Stomach and Duodenum. E. S. Jones, Hammond.—p. 124.
Surgery in Home. J. T. Freeland, Bedford.—p. 128.

Johns Hopkins Hosp. Bulletin, Baltimore

46: 159-216 (Feb.) 1930

*Race and Sex Distribution of Lesions of Syphilis in 10,000 Cases. T. B. Turner, Baltimore.—p. 159.
*Ocular Lesions in Fetal Syphilis. J. S. Friedenwald, Baltimore.—p. 185.
*Cardiac Output in Hyperthyroidism. C. W. Fullerton and G. A. Harrop, Jr., Baltimore.—p. 203.

Race and Sex Distribution of Lesions of Syphilis in Ten Thousand Cases.—In a total of 10,000 ambulatory patients above the age of 12 years known to have syphilis, whose histories were reviewed by Turner, the total number of cases was approximately equally divided among the three stages of syphilis—early, tertiary and latent. Of the total patients, 3.4 per cent had congenital syphilis. During the past ten years there has been observed a steady decline in the number of cases of early syphilis, i. e., of recent infections, in white persons, especially white males. Genital chancres were rarely observed in females. Reinfection was observed more than seven times as frequently in males as in females. Acute iritis occurred in 5.5 per cent of patients with secondary syphilis, although it was twice as frequent in negroes as in white persons. The incidence of acute meningitis in the white race was approximately twice that in negroes, and in males twice that in females. The incidence of neurorecurrence was higher in whites than in negroes, and higher in males than in females. Lesions of the skin and mucous membranes occurred with about equal frequency in the two races and the two sexes. The incidence in the total late cases was 8.8 per cent. Lesions of the skeletal system were observed in 8.8 per cent of the total late cases. Syphilitic stricture of the rectum was confined almost entirely to colored females. Gumma of the lymph nodes was an uncommon manifestation. It occurred preponderantly in negroes. Clinically recognizable syphilitic involvement of the cardiovascular system, exclusive of cerebral vascular lesions, occurred in 10 per cent of all late cases; the proportion of males to females and of negroes to whites was approximately 2 to 1. Uncomplicated aortitis, with or without aneurysm, occurred much more frequently in males than in females and in negroes than in whites. Aortic regurgitation was more than twice as common in males as in females, although it was nearly as common in whites as in negroes. Syphilitic angina pectoris was rare but was more common in whites and in males, respectively, than in negroes and females. Central nervous system syphilis was observed in late syphilis in 39.3 per cent of white males, in 22.3 per cent of white females, in 15.9 per cent of colored males, and in 7.0 per cent of colored females. Dementia paralytica was seven times as frequent in white persons as in negroes, and twenty-eight times as frequent in white men as in colored women. Tabes dorsalis with or without optic atrophy or Charcot joint was much more common in white males than in white females or in negroes of either sex. It was exceedingly rare in negro females. Cerebral vascular syphilis was observed somewhat more frequently in negroes than in whites.

Ocular Lesions in Fetal Syphilis.—Nine instances of intra-ocular inflammatory lesions in syphilitic infants are described by Friedenwald. On the basis of this pathologic analysis, a new clinical classification of the ophthalmoscopic pictures of congenital syphilis is given. The part played by myeloid cells in the lesions of fetal syphilis is discussed.

Cardiac Output in Hyperthyroidism.—The possible existence of a relationship between the rate of basal metabolism and the output of the heart measured under basal conditions was investigated by Fullerton and Harrop in eight carefully

selected patients with typical manifestations of the disease, including an elevated basal metabolism, but without evidence of organic cardiac disease or of lung disease either before or after treatment. A parallelism was found between the two. Only slight changes were found in the blood pressure of patients with hyperthyroidism before and after treatment. It is suggested that the increase in the cardiac output per minute is an approximate numerical measure of the increased work of the heart in this condition. The fairly close relation that exists between elevation of metabolism and cardiac output in hyperthyroidism strongly suggests that the level of the metabolism in the disease is a factor of the first importance in the regulation of the cardiac output per minute under basal conditions.

Journal of Allergy, St. Louis

1: 209-306 (March) 1930

Identity of Atopens of High Ragweed and Low Ragweed Pollen. W. C. Spain and M. Hopkins, New York.—p. 209.
Determination of Factors to Explain Marginal Failure in Hay-Fever Desensitization. H. H. Gelfand, New York.—p. 222.
Indirect Method of Testing for Conditions of Atopic Hypersensitiveness. M. Walzer, New York.—p. 231.
Similarities and Differences in Bacterial and Nonbacterial Allergy. F. M. Pottenger, Monrovia, Calif.—p. 235.
Hay-Fever. S. H. Hurwitz, San Francisco.—p. 245.
Botanic Survey of Hay-Fever Producing Plants in Pacific Northwest. R. F. E. Stier, G. Hollister and T. A. Bonser, Spokane, Wash.—p. 260.
Cinchophen Poisoning in Allergic Individuals: Two Cases. A. I. Fink, Cleveland.—p. 280.
*Value of Calcium in Asthma, Hay-Fever and Urticaria. M. A. Ramirez, New York.—p. 283.
Pollens Which Cause Hay-Fever in South Central Texas. S. W. French, Fort Sam Houston, Texas.—p. 286.

Value of Calcium in Asthma, Hay-Fever and Urticaria.—A carefuly study was made by Ramirez of the value of the administration of calcium in fifty cases of asthma, fifty of hay-fever, and fifty of urticaria. Only those cases showing at the initial examination a blood calcium of less than 10 mg. per hundred cubic centimeters of blood were selected. The administration of calcium, or of calcium and phosphorus, did not influence the symptoms or course of the disease in a single case, even though the blood calcium was actually increased. Some cases have shown temporary improvement. This is particularly true in urticaria, but the improvement does not last long.

Journal of Bacteriology, Baltimore

19: 149-229 (March) 1930

Explanation of Action of So-Called Accessory Substances in Association of Azotobacter and Cellulose Decomposing Organisms. C. E. Skinner, Minneapolis.—p. 149.
Utilization of Nitrogenous Organic Compounds and Sodium Salts of Organic Acids by Certain Soil Algae in Darkness and Light. C. E. Skinner and C. G. Gardner, Minneapolis.—p. 161.
Intermittent Growth of Bacterial Cultures. L. A. Rogers and G. R. Greenbank, Washington, D. C.—p. 181.
Isolation of a Bacteriolytic Principle from Root Nodules of Red Clover. E. R. Hitchner, Orono, Maine.—p. 191.
Influence of Certain Inorganic Salts on Germicidal Activity of Hydrogen Peroxide. H. R. Dittmar, I. L. Baldwin and S. B. Miller, Madison, Wis.—p. 203.
Filtration of Bacteriophage. N. W. Larkum and M. F. Semmes, Lansing, Mich.—p. 213.
Detection of Ammonia Production by Bacteria in Agar Slants. P. A. Hansen, Geneva, N. Y.—p. 223.

Journal of Experimental Medicine, Baltimore

51: 519-673 (April 1) 1930

Immunologic Significance of Colostrum: III. Intranuclear Bodies in Renal Disease of Calves. T. Smith, Princeton, N. J.—p. 519.
Vital Staining: IV. India Ink and Brilliant Vital Red. Importance of Considering Liver Excretion in Study of Blockade of Reticulo-Endothelial System. J. Victor, J. R. Van Buren and H. P. Smith, Rochester, N. Y.—p. 531.
Id.: V. Double Staining with Brilliant Vital Red and Niagara Sky Blue. Correlation of Histologic with Physiologic Data. F. B. Davies, R. C. Wadsworth and H. P. Smith, Rochester, N. Y.—p. 549.
Concerning Specificity and Nature of Phenomenon of Local Skin Reactivity to Various Bacterial Filtrates. G. Shwartzman, New York.—p. 571.
*Oral Immunization Against Pneumococcus: Use of Bile Salt Dissolved Organisms, Time of Appearance of Immunity and Dosage. V. Ross, New York.—p. 585.
Effect on Rate of Urea Excretion of Carmine Deposition in Cells of Renal Tubules. E. M. MacKay and L. L. MacKay, San Francisco.—p. 609.
*Common Cold: III. Upper Respiratory Flora of Infants. Y. Kneeland, Jr., New York.—p. 617.
Reactions of Rabbits to Intracutaneous Injections of Pneumococci and Their Products: IV. Development of Skin Reactivity to Derivatives of Pneumococcus. L. A. Julianelle, New York.—p. 625.
Id.: V. Development of Eye Reactivity to Derivatives of Pneumococci. L. A. Julianelle, New York.—p. 633.
Id.: VI. Hypersensitiveness to Pneumococci and Their Products. L. A. Julianelle, New York.—p. 643.
Leukemia in Mice: I. Experimental Transmission of Leukemia. M. N. Richter and E. C. MacDowell, Cold Spring Harbor, N. Y.—p. 659.

Oral Immunization Against Pneumococcus.—Ross found that the feeding of heat killed pneumococci grown in milk produces a fair degree of immunity. Feeding acid killed degraded avirulent organisms produces little protection. Feeding the desiccated, mechanically disrupted organisms creates a high degree of protection. A high degree of immunity is produced by feeding the Berkefeld filtrate of sodium glycocholate dissolved cells. The treated animals are resistant to subcutaneous as well as to intraperitoneal injections.

Common Cold: Upper Respiratory Flora of Infants.—A study made by Kneeland of the nose and throat flora of infants disclosed that the upper respiratory tract is sterile at birth. In the first two weeks of life the infant acquires a basal flora comparable to that of adults, except that the potential pathogens are absent. During the ensuing months the potential pathogens may appear without giving rise to symptoms and by 8 months the infant's flora is entirely comparable to that of the adult. There is no evidence of a specific bacterial incitant for the first colds of infancy. In infants with recurrent colds, secondary infection of the nose with pneumococci or *B. pfeifferi* probably plays a part.

Journal of Industrial Hygiene, Baltimore

12: 31-74 (Feb.) 1930

Abnormalities Produced in Organism by Electricity. O. R. Langworthy and W. B. Kouwenhoven, Baltimore.—p. 31.
New Kata-Thermometer for Hot Atmospheres and Simplified Method for Computing. T. C. Angus, L. Hill and H. E. Soper, Hampstead, London.—p. 66.

Journal of Lab. & Clin. Medicine, St. Louis

15: 519-622 (March) 1930

*Sickle Cell Anemia. W. Z. Fradkin and L. S. Schwartz, New York.—p. 519.
*Spontaneous Meningeal Hemorrhage. F. H. Lamb, Davenport, Iowa.—p. 530.
Streptococci in Relation to Pathogenicity and Sugar Fermenting Properties. L. G. Hadjopoulos and R. Burbank, New York.—p. 539.
Determination of Effectiveness of Acidophilus Culture in Functional Disturbances of Colon. L. H. Hitzrot and F. B. Lynch, Jr., Philadelphia.—p. 548.
*Serum Protein Concentration in Case of Multiple Myeloma of Plasma Cell Type. R. S. Hubbard and C. E. Case, Clifton Springs, N. Y.—p. 554.
Clock-Timed Gravity Device for Delivering Solutions at Constant Rates Intravenously. A. R. Colwell, Chicago.—p. 556.
Method of Mounting Pathology Specimens Under Watch Crystals and Using Colored Background for Contrast. C. H. Manlove, Portland, Ore.—p. 559.
Quantitative Tuberculin Test. J. E. Blair and W. I. Galland, New York.—p. 566.
Application of Corper-Uyei Culture Method in Routine Examination of Sputum for Tubercle Bacilli. J. S. Cunningham and P. L. Cummings, Rochester, N. Y.—p. 572.
Comparison of Kolmer, Wassermann and Kahn Tests and Dark-Field Examination in Primary Syphilis. R. G. Owen and H. E. Cope, Detroit.—p. 579.
Time-Saving Device for Washing Test Tubes. I. Davidsohn and E. M. Yagle, Philadelphia.—p. 584.
Attempts to Secure Objective Methods of Studying Mild Anaphylaxis. R. D. Templeton and W. F. Bollens, Chicago.—p. 585.
Sedimentation Velocity of Erythrocytes in Thyrotoxicosis. J. M. Mora and J. T. Gault, Chicago.—p. 590.
Technic for Operations on Several Small Animals at One Time by Use of Amytal Anesthesia. R. L. Johnston, Cleveland.—p. 593.
Determination of Inorganic Phosphate of Serum and Spinal Fluid on Supernatant Fluid from Calcium Estimation. C. Lowenberg and M. R. Mattice, New York.—p. 598.
Gastro-Enterologic Table with Special Drainage Outfit. M. Einhorn, New York.—p. 601.
Improved Stimulus Selector. R. H. Fitch, Madison, Wis.—p. 603.

Sickle Cell Anemia.—A case of sickle cell anemia complicated by mesenteric tuberculosis is reported by Fradkin and Schwartz with improvement following laparotomy and transfusion. The diagnosis of an acute surgical condition of the

abdomen in a negro patient is hazardous without a previous search for sickle cells in the blood smear. Emphasis is directed to the fact that most patients with sickle cell anemia are susceptible to tuberculosis, probably because of their lowered resistance to infection. A complete review of the literature of sickle cell anemia is given.

Spontaneous Meningeal Hemorrhage.—Seven cases of spontaneous meningeal hemorrhage are reported by Lamb with reference particularly to the cerebrospinal fluid. In five cases in which drainage of the subarachnoid fluid (lumbar puncture) was instituted early and repeated, there was a prompt improvement and recovery. In two cases in which drainage was delayed, death followed within twenty-four and thirty-six hours, respectively.

Serum Protein Concentration in Multiple Myeloma of Plasma Cell Type.—The results obtained by Hubbard and Case in the patient studied by them, as compared with those of Perlzweig and his co-workers, show comparable high values for fibrinogen, normal rather than low values for albumin, and normal to low instead of high figures for total protein and globulin.

Journal of Nerv. & Ment. Disease, New York

71: 249-360 (March) 1930

Sleep as Problem of Localization. C. v. Economo, Vienna, Austria.—p. 249.
Turning Tendency and Conjugate Deviation. O. Oedegaard, Baltimore, and P. Schilder, Vienna, Austria.—p. 260.
Amaurotic Family Idiocy (Tay-Sachs' Disease). D. Nathan, Philadelphia.—p. 268.
Possible Abuses of Valuable Hypnotics: Allonal. L. H. Smith and P. Sloane, Philadelphia.—p. 271.
Bromide Intoxication. O. Diethelm, Baltimore.—p. 278.

Journal of Nutrition, Springfield, Ill.

2: 325-435 (March) 1930

*Destruction of Vitamin C in Boiling of Milk. E. W. Schwartze, F. J. Murphy and R. M. Hann, Pittsburgh.—p. 325.
Vitamin B Complex of Red Kidney Beans and Polished Rice. J. H. Axtmayer, Rio Piedras, Porto Rico.—p. 353.
Gaseous Exchange of Human Subject: I. As Affected by Ingestion of Water at 37 C. T. M. Carpenter and E. L. Fox, Boston.—p. 359.
Id.: II. As Affected by Small Quantities of Dextrose. T. M. Carpenter and E. L. Fox, Boston.—p. 375.
Id.: III. As Affected by Small Quantities of Levulose. T. M. Carpenter and E. L. Fox, Boston.—p. 389.
Experimental Nutritional Polyneuritis in Rat. M. R. Sandels, New York.—p. 409.
*Experiments on Influence of Food on Longevity. H. C. Sherman and H. L. Campbell, New York.—p. 415.

Destruction of Vitamin C in Boiling of Milk.—The amount of antiscorbutic vitamin destroyed by lightly boiling 3 quarts of milk for five minutes in a glass beaker or in an aluminum stew pan was found by Schwartze et al. to be approximately 20 per cent. The quality of the winter milk used and obtained from ensilage-fed cows was better than any heretofore reported and almost, if not actually, as potent as the best summer milk obtained from cows on pasturage. This points to a forgotten but possible high potential value of milk as a carrier of vitamin C. The amount of aluminum contributed to Pittsburgh tap water and fresh milk on boiling in an aluminum vessel is practically nil, being from 0.1 to 0.4 part per million.

Experiments on Influence of Food on Longevity.—Sherman and Campbell believe that their experimental work with rats has established beyond any reasonable doubt that, starting with a diet which is already clearly adequate, it may still be possible to induce a significant improvement in longevity by enriching the diet in certain of its chemical factors.

Journal of Pharmacol. & Exper. Therapeutics, Baltimore

38: 247-347 (March) 1930

Effects of Pure Nitrous Oxide Anesthesia on Human Blood Pressure. S. Wright and J. H. Thompson, Cambridge, Mass.—p. 247.
Pharmacology of Xysmalobinum. J. M. Watt, Johannesburg, S. Africa.—p. 261.
*Toxic Effects of Irradiated Ergosterol. J. C. Hoyle, Cambridge, Mass.—p. 271.
Effects of Alcohol on Normal and Damaged Liver. S. M. Rosenthal, Washington, D. C.—p. 291.
Blood Composition of Animals Under Pathologic Conditions: II. Experiments with Lupines. A. A. Horvath, Princeton, N. J.—p. 303.
Investigation of Insulin-Like Properties of Uvursin, Oxycatalyst and Solanum Sanitwongsei Berries. M. L. Long and F. Bischoff, Santa Barbara, Calif.—p. 313.
II. Action of Ephedrine, Pseudo-ephedrine and Epinephrine on Bronchiolar Muscle of Isolated Lung. E. E. Swanson and R. K. Webster, Indianapolis.—p. 327.
*Magnesium Oxide as Aid to Antipyretic Action of Phenacetin in Dogs. J. E. Winter, C. H. Richey and H. G. Barbour, Louisville, Ky.—p. 343.

Toxic Effects of Viosterol.—The toxic properties of ergosterol that has been irradiated in alcoholic solution have been confirmed by Hoyle. Exposure to oxygen does not affect the toxic action, and material that has been kept in an atmosphere of nitrogen is equally toxic. Toxic effects are produced in rats only when the animals are taking a synthetic diet. If a natural diet of bread and milk is given, arterial disease and the other toxic features are absent. Such animals, however, fail to gain weight at the normal rate and show urinary calculi after a time if the experiment is prolonged, just as do animals receiving large doses of ergosterol that has been irradiated in oil.

Magnesium Oxide as Aid to Antipyretic Action of Acetphenetidin in Dogs.—Winter et al. found that the oral administration of acetphenetidin to dogs produces an antipyretic effect which is considerably enhanced by the addition of magnesium oxide. The results thus far obtained preclude final decision as to the presence or absence of synergism (i. e., potentiation as distinguished from simple summation); but they suggest trial of this combination in the hope of securing equal therapeutic benefit, with less chance of poisoning.

Kansas M. Soc. Journal, Topeka

31: 81-118 (March) 1930

Points in Tuberculosis of Childhood. A. J. Brier, Topeka.—p. 81.
Late Manifestations of Syphilis of Brain and Spinal Cord. H. C. Curtis, Wichita.—p. 89.
Constipation. F. D. Smith, LaCrosse.—p. 92.
Acquired Hemolytic Icterus. D. R. Black, Kansas City, Mo.—p. 94.

Medical Journal & Record, New York

131: 285-336 (March 19) 1930

Stretching of Pylorus Without Operative Intervention. M. Einhorn, New York.—p. 285.
Study of 1,100 Dextrose Tolerance Tests. H. J. John, Cleveland.—p. 287. (To be C'td.)
Chronic Meningococcemia: Case. H. Hennell and H. J. Wiener, New York.—p. 292.
Screw Worms in Nose: Two Cases. W. L. Rhodes, Corpus Christi, Texas.—p. 295.
Basic Ideology for New Method of Hay-Fever Prophylaxis and Allied Allergies. W. A. Wovschin, New York.—p. 296.
On Nature of Inclusion Bodies in Yellow Fever. W. H. Hoffmann, Havana, Cuba.—p. 299.
Problem of Contraception. M. P. Levinson, New York.—p. 300.
Irrationale of Treatment of Very Hard of Hearing. H. Hays, New York.—p. 303.
Prevention of Tonsillar Bleeding. G. B. McAuliffe, New York.—p. 305.
When Is An Operation Necessary in Acute Mastoiditis? G. O. Cummings, Portland, Me.—p. 306.
Etiology of Acute Rhinitis. J. A. F. Pfeiffer, Baltimore.—p. 309.
Sinusitis in Relation to Acute Bronchitis. M. Schwartz, Philadelphia.—p. 310.
Agranulocytic Angina. B. F. Kleiner, Philadelphia.—p. 312.
Prevention and Treatment of Common Cold and Pneumonia by Therapy and Methods of Common Foundation System of Medicine. C. Gluck, New York.—p. 315.

New England J. of Medicine, Boston

202: 513-558 (March 13) 1930

Cholangeitis and Hepatitis. J. B. Deaver, Philadelphia.—p. 513.
Epidemic Meningitis Control. G. W. Anderson and G. H. Bigelow, Boston.—p. 518.
Meningococcus Meningitis in Infants. C. F. McKhann, Boston.—p. 520.
*Experimental Combined System Disease. E. F. Gildea, New Haven, Conn., E. E. Kattwinkel, Newton Highlands, Mass., and W. B. Castle, Boston.—p. 523.
Governor's Welfare Program and Certain Aspects of Chronic Disease. R. B. Osgood, Boston.—p. 527.
Simple Therapeutic Arc. E. C. Peck, New London, Conn.—p. 529.
Chart for Computation of Harris-Benedict Standards of Basal Metabolism. C. Bruen, New York.—p. 531.
Progress in Pediatrics. J. L. Morse, Boston.—p. 533.

Experimental Combined System Disease.—Gildea et al. summarize their experiences as follows: Eight dogs fed a diet deficient in both the antineuritic and the pellagra preventing portions of vitamin B, and six dogs fed a diet deficient only in the antineuritic portion, developed loss of appetite, vomiting, a spastic type of paralysis, beginning usually in the posterior extremities and progressing rapidly to convulsions, coma and death, unless treated with vitamin B extracts. Four dogs fed a diet lacking mainly the pellagra preventing portion of vitamin B developed no significant neurologic symptoms but died eventually in convulsions. Postmortem examination showed that all fourteen of the animals chronically deprived of the antineuritic portion suffered from a diffuse, irregular loss of myelin, chiefly in the white matter of the spinal cord and less marked in the cerebral cortex. In nine of these animals slight lesions of the peripheral nerves were found. Early changes were observed in the nervous systems of the four dogs placed on the diet deficient in the pellagra preventing portion of vitamin B. The lesions in the spinal cords of the animals of the first two groups were considered to bear a close resemblance to those encountered in human combined system disease. Gastric analyses showed no significant changes in the course of these observations and thus no evidence for a causal relationship between combined system disease and achlorhydria was established. Since the chronic deficiency, particularly of the antineuritic portion of vitamin B, appeared to produce in the dogs lesions closely resembling those occurring in human cases of combined system disease in which achlorhydria is almost invariably encountered, it is suggested that the basis of the development of that disease may be a virtual deficiency of the antineuritic portion of vitamin B brought about in some way by the achlorhydria.

202: 559-606 (March 20) 1930

Biliary Tract. H. C. Clifton and B. B. Landry, Hartford, Conn. —p. 559.
Myomectomy During Pregnancy: Case. L. E. Phaneuf, Boston.—p. 565.
*Essential Hematuria: Pathology of Renal Pelvis in Five Cases. B. C. Wheeler, Worcester, Mass.—p. 566.
Use of Nonspecific Protein Therapy in General Practice. J. Z. Naurison and M. Millman, Springfield, Mass.—p. 573.
Essentials versus Nonessentials in Milk Sanitation. P. B. Brooks, Albany, N. Y.—p. 582.
Brodie's Abscess in Pelvic Bone. C. F. Painter, Boston.—p. 585.

Essential Hematuria: Pathology of Renal Pelvis.—Wheeler recapitulates the evidence that essential hematuria is not the early manifestation of an impending disease but is caused by a local lesion in the kidney, and reports five cases of the disease in which certain pathologic changes were present in the pelvis.

New Jersey M. Soc. Journal, Orange

27: 189-298 (March) 1930

Newer Methods of Treatment in Attack on Syphilis. J. F. Schamberg, Philadelphia.—p. 189.
Diagnosis, Preparation, Operation and After-Treatment of Benign Enlargement of Prostate Gland. C. H. deT. Shivers, Atlantic City. —p. 195.
Traumatized Kidney: After-Effects. S. R. Woodruff, Jersey City.—p. 207.
Malignant Tumors of Testicle. D. F. Bentley, Camden.—p. 211.
Congenital Carcinoma of Testicle in Infant. W. London, Perth Amboy. —p. 215.
Urologic Symptoms; Significance. R. L. McKiernan, Newark.—p. 217.
Etiology and Treatment of Chorea. E. L. Minard, East Orange.—p. 219.
Celiac Disease and Treatment. K. Blanchard, East Orange.—p. 222.
Buttermilk in Infant Feeding. S. A. Levinsohn, Paterson.—p. 227.
Oxygen Tent in Pneumonia. C. Brown, Arlington.—p. 232.
Dextrocardia: Case. H. R. Livengood, Elizabeth.—p. 235.
Chronic Paranasal Sinus Disease in Experience of Internist. R. A. Kern and L. A. Godey, Philadelphia.—p. 238.

New York State J. of Medicine, New York

30: 313-374 (March 15) 1930

Kidney in Hypertension. A. M. Wedd, Clifton Springs.—p. 313.
Common Disabilities of Foot: Diagnosis and Treatment. A. Whitman, New York.—p. 319.
Syphilis of Liver: Negative Wassermann: Case. C. L. Davis, Philadelphia.—p. 324.
Rheumatic Fever in Children: Clinical Aspects. A. D. Kaiser, Rochester. —p. 325.
Progress of Upstate Diphtheria Prevention Campaign to Date. H. F. Senftner, Albany.—p. 331.

Northwest Medicine, Seattle

29: 97-148 (March) 1930

Management of Ocular Emergencies. J. M. Patton, Omaha.—p. 97.
Care of Acute Otitis Media. I. E. Gaston, Portland, Ore.—p. 101.
Brain Abscesses of Otitic Origin. F. A. Plum, Honolulu, T. H.—p. 105.
Chronic Duodenal Stasis. H. L. Bockus, Philadelphia.—p. 109.
Acidosis. C. H. Hofrichter, Seattle.—p. 116.
Chylous Cyst of Mesentery. T. M. Joyce, M. A. Howard and J. H. Fitzgibbon, Portland, Ore.—p. 123.
Surgical Treatment of Cardiospasm. O. F. Lamson, Seattle.—p. 125.
Experimental Transplantation of Ureter in Which Transfixion Suture is Used to Complete Anastomosis. R. C. Coffey, Portland, Ore.—p. 128.
What Basic Science Has Accomplished. W. B. Penney, Tacoma, Wash. —p. 129.
Organized Medicine. J. T. Rooks, Walla Walla, Wash.—p. 131.
Problems of Thyroid Disease. M. S. Rosenblatt, Portland, Ore.—p. 133.
Cancer and Endocrines. H. H. Schwartz, Seattle.—p. 133.

Pennsylvania Medical Journal, Harrisburg

33: 365-428 (March) 1930

Essentials for Diagnosis of Diabetes Mellitus. L. Jonas, Philadelphia. —p. 365.
Complications of Diabetes. F. A. Evans, Pittsburgh.—p. 368.
Treatment of Diabetes. O. H. Petty, Philadelphia.—p. 370.
Thrombosis of Lateral and Cavernous Sinuses. J. J. Sullivan, Jr., Scranton.—p. 373.
Cholecystography. J. F. McCullough, Pittsburgh.—p. 378.
Treatment of Cholecystitis. J. W. Dixon, Wilkinsburg.—p. 380.
Plan for Reduction of Mortality in Acute Appendicitis. J. O. Bower and J. H. Clark, Philadelphia.—p. 383.
Enuresis. R. K. Rewalt, Williamsport.—p. 386.
Endocarditis and Pericarditis with Blood Stream Infection of Streptococcus Viridans. T. P. Tredway, Erie.—p. 389.
Bronchobiliary Fistula. E. W. Meredith, Pittsburgh.—p. 389.
Complete Unilateral Diaphragmatic Hernia. G. B. Meyers, Pittsburgh. —p. 390.
Addison's Disease. H. J. Bell, Dawson.—p. 391.
Fistula of Abdominal Wall Following Appendiceal Abscess. C. G. Strickland, Erie.—p. 391.
Chronic Infections of Sphenoid Sinuses. C. F. Heard, Erie.—p. 392.

Philippine J. of Science, Manila

41: 233-385 (March) 1930. Partial Index

Clinical Skin Lesions in Philippine Monkeys Resulting from Experimental Inoculation with Human Leprous Material. O. Schöbl, E. V. Pineda and I. Miyao.—p. 233.
Helminth Parasites of Mammals in Philippine Islands. E. E. Wehr. —p. 261.
Transmission of Virus of Dengue Fever from Mosquito to Mosquito. J. H. St. John, J. S. Simmons and F. H. K. Reynolds.—p. 381.

Public Health Reports, Washington, D. C.

45: 541-598 (March 14) 1930

Further Observations on Epidemiology of Narcotic Drug Addiction. W. L. Treadway.—p. 541.
Public Health Survey of Pine Bluff, Ark. A. J. McLaughlin.—p. 553.

45: 599-665 (March 21) 1930

Public Health Survey of Fort Smith, Ark. A. J. McLaughlin.—p. 599.

South Carolina M. Assn. Journal, Greenville

26: 55-78 (March) 1930

Phagocytosis of Dysentery. A. T. Brice and M. E. McKnight, Florence. —p. 58.
Indications for Mastoidectomy. J. W. Jervey, Jr., Greenville.—p. 58.
Diagnosis of Pulmonary Tuberculosis. C. W. Evatt, Greenville.—p. 61.
Self-Retaining Vaginal Retractors. C. Rigby, Spartanburg.—p. 63.
Diagnosis of Gonococcal Arthritis: Three Cases in Patients with Chronic Rheumatic Endocarditis. O. H. P. Pepper, Charleston.—p. 64.

Southwestern Medicine, Phoenix, Ariz.

14: 101-152 (March) 1930

Ringworm Infection of Hands and Feet. L. M. Smith, El Paso, Texas. —p. 101.
Ragweed Hay-Fever in Salt River Valley. E. W. Phillips, Phoenix, Ariz.—p. 103.
Details in Treatment of Heart Disease. W. Dock, San Francisco.—p. 104.
Abdominal Symptoms Due to Cardiovascular Disease. G. Werley, El Paso, Texas.—p. 108.
Coronary Conclusions. R. S. Flinn, Prescott, Ariz.—p. 111.
Myocardial Insufficiency: Diagnosis and Suggestions of Treatment. W. R. Leverton, Tucson, Ariz.—p. 114.
Early Cancer Recognition: Emphasis on Cervix. J. W. Cathcart, El Paso, Texas.—p. 120.
Chronic Prostatitis. H. M. Purcell, Phoenix, Ariz.—p. 123.
Treatment of Gonorrheal Ophthalmia. H. Yandell, Phoenix, Ariz.—p. 126.
Liver Injury Following Antisyphilitic Treatment. I. Bancroft, Los Angeles.—p. 139.

Surgery, Gynecology & Obstetrics, Chicago

50: 513-654 (March) 1930

*Inquiry into Basic Cause and Nature of Cervical Cancer. K. V. Bailey, Manchester, England.—p. 513.
*Annular Pancreas. N. J. Howard, San Francisco.—p. 533.
*Mechanism Controlling Migration of Omentum. C. B. Schutz, Kansas City, Mo.—p. 541.
*Injection Treatment of Varicose Veins. G. de Takáts and H. Quint, Chicago.—p. 545.
*Bacteriology and Pathogenesis of Appendicitis. A. H. E. Dorsey, Rochester, Minn.—p. 562.
Observations on Exteriorized Appendix of Dog. P. N. Harris, B. Cox and A. Blalock, Nashville, Tenn.—p. 572.
Traumatic Asphyxia. W. R. Laird and M. C. Borman, Montgomery, W. Va.—p. 578.
Increased Tolerance of Pregnant Rabbits for Insulin. G. V. S. Smith and G. A. Marks, Brookline, Mass.—p. 586.
*Preconception Ovarian Irradiation: Influence on Descendants of Albino Rat (Mus Norvegicus). D. P. Murphy, Philadelphia.—p. 588.
Resection and Obstruction of Colon (Obstructive Resection). F. W. Rankin, Rochester, Minn.—p. 594.
Technic of Ventrofixation of Uterus. I. Abell, Louisville, Ky.—p. 599.
Reconstruction of External Ear. G. W. Pierce, San Francisco.—p. 601.
Hemolytic Icterus and Technic of Splenectomy. L. P. Bell, Woodland, Calif.—p. 606.
Rupture of Tendons of Hand. M. L. Mason, Chicago.—p. 611.
Operation for Tuberculosis of Epididymis. A. B. Cecil, Los Angeles. —p. 624.
Reflux of Pancreatic and Duodenal Secretions Through Drainage Tube in Common Bile Duct. W. Walters and J. M. Marshall, Rochester, Minn.—p. 627.
Carcinoma of Thoracic Portion of Esophagus. C. Eggers, New York. —p. 630.
Implantation Method of Skin Grafting. O. H. Wangensteen, Minneapolis, Minn.—p. 634.
Rupture of Urethra: Twelve Cases. C. C. Higgins, Cleveland.—p. 639.

Inquiry into Basic Cause and Nature of Cervical Cancer.—Bailey concerns himself with a discussion of the pathology of erosion of the cervix because he says the ultimate sequel to erosion is malignancy, but there is the phase between these two which must be bridged—the premalignant phase which must contain the primary malignant reactions.

Annular Pancreas.—An instance of annular pancreas manifesting the symptoms of chronic duodenal ileus is reported by Howard. The operation of releasing the pancreatic ring was followed by pseudocyst formation, and drainage of the cyst resulted in a pancreatic fistula which healed spontaneously. The metabolic disorders and symptoms accompanying the pancreatic fistula were relieved by the administration of sodium bicarbonate by mouth and in rectal instillations, and by salt solution beneath the skin and intravenously. Twenty cases of annular pancreas have been reported in the literature. Four cases presented symptoms of high intestinal obstruction. In three operation was performed for relief of obstruction.

Mechanism Controlling Migration of Omentum.—Schutz concludes from his experiments that migration of the omentum is controlled and caused by migration of the omental arteries. Migration of the omental arteries occurs in the direction of their respective blood flow and is caused by increase in the local blood force following hyperemia of the omental arteries. The question as to why the omentum, the only function of which seems to be a mechanical one, i. e., walling off and localization of foci of peritoneal irritation, should have such an exuberant blood supply may be answered by this theory. In this connection it is interesting to note the resemblance that the structure of the omentum bears to erectile tissue and to recall the fact that movements of erectile tissue are controlled by a mechanism similar to that described.

Injection Treatment of Varicose Veins.—The management of 500 cases of varicose veins and their sequelae is described by de Takáts and Quint. A thorough examination of the patient to rule out conditions that contraindicate injections is discussed. Tests of the arterial and venous circulation are described. Patients with beginning arterial occlusion or with obstructed deep venous circulation are excluded from treatment. The test for reflux from the deep veins is also significant. The technic of injections and the solutions used are described, together with the selection of the site and the number of injections. The histologic structure of injected veins is briefly discussed. The perusal of follow-up records showed recurrences in 10.8 per cent of the cases. In such cases the persistence of increased pressure usually indicated surgical procedures, such as ligation or radical excision. The radical operation for varicose veins has been carried out in 4 per cent of the total number of treated cases. It is believed to have a limited but definite place in the treatment of varicose veins.

Bacteriology and Pathogenesis of Appendicitis.—The relation of focal infection to appendicitis, Dorsey says, is definitely shown by the marked contrast between the degree of localization in the appendixes of streptococci found in the nasopharynges of patients who had appendicitis and those who had arthritis. It seems, then, that streptococci more often than colon bacilli or other bacteria which are isolated from the diseased appendix have definite etiologic significance in appendicitis; that the nasopharynx may be the source of the streptococcus having this localizing power, and that appendicitis is commonly a hematogenous intramural streptococcal infection.

Preconception Ovarian Irradiation: Influence on Descendants of Albino Rats.—No gross structural abnormalities attributable to maternal ovarian irradiation were observed by Murphy among 493 first and second generation descendants of a group of animals which received radium irradiation of the ovaries previous to conception.

Tennessee State M. Assn. Journal, Nashville

23: 79-114 (March) 1930

Malignancy of Oral Cavity. C. M. Hamilton, Nashville.—p. 79.
Significance of Neuritic Pains in Middle Aged and Elderly People. W. Rowland, Memphis.—p. 82.
Precordial Pain. W. T. DeSautelle, Knoxville.—p. 85.
Erosion of Cervix. J. C. Burch, Nashville.—p. 92.
Hypotension. J. A. McCulloch, Maryville.—p. 94.
Precancerous Dermatosis. A. H. Lancaster, Knoxville.—p. 96.

Texas State J. of Medicine, Fort Worth

25: 713-778 (March) 1930

Need of Reform in Care and Commitment of Mentally Sick; Medical Jurisprudence as It Relates to Proof of Insanity. J. S. Turner, Dallas.—p. 720.
Veterinary Cooperation in Public Health Work. N. F. Williams, Fort Worth.—p. 724.
Standard Milk Ordinance and Public Health. M. M. Miller, Austin. —p. 731.
Evolution of Practical Public Health Work. E. W. Prothro, Fort Worth. —p. 734.
Atonic and Spastic Constipation. E. V. DePew, San Antonio.—p. 737.
Chronic Appendicitis. H. R. Dudgeon, Waco.—p. 742.
*Lumbar Anesthesia. J. T. Krueger, Lubbock.—p. 746.
Urologic Symptom Complex at Menopause. B. W. Turner, Houston.—p. 748.
Asphyxia Neonatorum. H. L. Kincaid, Houston.—p. 750.
Sympathetic Ophthalmia. J. M. Woodson, Temple.—p. 753.
*Aneurysms of Aorta. P. Brindley and E. H. Schwab, Galveston.—p. 757.

Lumbar Anesthesia.—Not a death or any case in which there have been any lasting bad effects is the report made by Krueger in reviewing 900 lumbar anesthesias. He says it is a safe procedure, easily induced and pleasant for the patient. It does away with postoperative complications. It makes the operation easier and speeds up operative procedure on account of the complete relaxation of muscles and contraction of the intestines. It adds greatly to the postoperative comfort by removing vomiting and gas pains, and permits the patient to take nourishment early. It is simple to give, cheap and a great time saver.

Aneurysms of Aorta.—Brindley and Schwab report an incidence of 4.36 per cent for aortic aneurysms, or an average of one in every twenty-three necropsies. This is said to be higher than any incidence recorded in the literature. Seventy-three per cent of the 2,290 necropsies were performed on males. The aneurysms occurred two and one-half times more frequently in males than in females. Seventy-one per cent occurred in negroes, 29 per cent in whites. The proportion of negroes and whites making up the total of 2,290 necropsies was 52 and 48 per cent, respectively, so that aortic aneurysms occur about 2.4 times as frequently in negroes as in white persons. Of those whose occupation could be determined, 68.8 per cent were laborers. More than half of the aneurysms occurred in patients between the ages of 30 and 50. The oldest was 86, the youngest 25, three being 25 years of age. The average age of the negroes was 44.5 years; the average age of the whites

was 50.7 years. As to the more immediate causes of the aneurysms, seventy-seven were considered to be syphilitic, nine arteriosclerotic, one mycotic, and one mycotic and syphilitic in origin. They were unable to classify twelve cases. Eighty-two per cent of the aneurysms occurred above the diaphragm and 13 per cent in the abdominal aorta, and 5 per cent involved both the abdominal and the thoracic aorta. Of those above the diaphragm, seventy occurred in the aortic arch; twenty-seven of these were in the ascending portion, twenty-six in the transverse portion and seventeen in the descending portion. Ninety-one per cent of the aneurysms were single. The most common type was found to be the saccular form, which was present in 81 per cent of the cases. Fifty-seven of the aneurysms had caused erosions. Death had resulted from aneurysmal rupture in forty-six patients; 21 per cent died from heart failure; 7 per cent from pneumonia; 5 per cent from tracheal compression; 4 per cent from cerebral hemorrhage and encephalomalacia, and 3 per cent from pulmonary tuberculosis.

United States Naval M. Bulletin, Washington, D. C.

28: 265-522 (April) 1930

*Combined Precipitation (Kahn)-Complement Fixation (Bass) Tests in Serum Diagnosis of Syphilis. J. E. Houghton and H. S. Sumerlin.—p. 265.
*Factor in Cancer Susceptibility. R. K. Y. Dusinberre.—p. 273.
Leprosy in Virgin Islands. T. H. Hayes.—p. 292.
Haiti's Greatest Public Health Problem. K. C. Melhorn.—p. 310.
Medical Mycology. G. W. Cooper.—p. 312. (To be C'td.)
Use of Hypertonic Solutions in Treatment of Acute Intracranial Hypertension. F. F. Murdoch.—p. 322.
Barbital, Use and Misuses. H. M. Walker.—p. 327.
Otorhinopharyngeal Hemorrhages. A. H. Cecha.—p. 335.
Local Application of Aspirin for Control of Postextraction Pain. R. B. Putman and L. D. Mitchell, Jr.—p. 343.
Treatment of Syphilis. W. K. Hicks.—p. 345.
Typhoid: Three Cases Diagnosed and Treated on Board U. S. S. *Relief*. J. M. McCants.—p. 351.
Meningococcemia Followed by Cerebrospinal Fever. V. B. Riden.—p. 357.
Cerebrospinal Fever: Analysis of Eighteen Fatal Cases. P. F. Dickens.—p. 360.
Gangrenous Stomatitis: Case. W. D. Davis.—p. 372.
Coronary Disease Causing Right Hydrothorax: Case. W. H. Funk.—p. 374.
Malaria Treatment of Cerebrospinal Syphilis: Two Cases. C. S. Stephenson and J. Love.—p. 376.
Gonococcus Infection of Joint. F. R. Moore.—p. 380.
Malignancies of Antrum. G. B. Trible.—p. 382.
Useful Method of Skin Defect Closure. J. W. Kimbrough.—p. 385.
*Effective Substitute for Collodion. R. Cuthbertson.—p. 387.

Combined Precipitation Tests in Serum Diagnosis of Syphilis.—The only reagents employed by Houghton and Sumerlin are the blood serum from the patient, standard Kahn antigen, a 10 per cent suspension of washed guinea-pig corpuscles, and 0.9 per cent sodium chloride solution. The apparatus used is the standard Kahn test equipment (10)—racks and tubes. The method is said to be a valuable complementary check, and the addition of the anti-guinea-pig hemolytic system is a useful indicator in the interpretation of the precipitation in some instances. The combined procedure greatly reduces the sources of error inherent in the various Wassermann methods requiring the use of a number of variable reagents and time-consuming manipulations before the results of the test are obtained.

Factor in Cancer Susceptibility.—Dusinberre believes that cancer appears to be a condition of a cell brought about by a recessive mutation in one of its chromosomes, and that the greatly diminished amount of exposure to direct sunlight that human beings in this day and age receive over a long period is probably a large underlying factor in the etiology of cancer; that is, that there is a natural optimum exposure to ultraviolet rays for man, and that in the absence of it, as well as with an excess of it, recessive mutations are more frequent. Statistics are cited by Dusinberre in proof of his beliefs.

Effective Substitute for Collodion.—The formula given by Cuthbertson is that of mastisol, which is used in the clinic of Dr. Lorenz Böhler of Vienna. The formula is: resin, 20 Gm.; chloroform, 50 cc.; linseed oil, 20 drops. It is easier to apply, more flexible, more elastic, and easier to remove than collodion.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Dis. in Childhood, London

5: 1-82 (Feb.) 1930

*Rheumatic Pericarditis in Childhood. L. Findlay, J. W. MacFarlane and M. M. Stevenson.—p. 1.
*Calcium and Phosphorus Metabolism in Older Children on Mixed Diet Including Large or Small Quantity of Milk. A. M. Courtney and A. Brown.—p. 17.
*Calcium and Phosphorus Concentration in Small and Large Intestines of Children. A. M. Courtney.—p. 23.
*Salt Content of Woman's Milk in Cases in Which Use Was Not Beneficial. A. M. Courtney and A. Brown.—p. 28.
Protein and Nonprotein Fractions of Samples of Woman's Milk. A. M. Courtney and A. Brown.—p. 36.
Treatment of Chorea by Nirvanol. H. T. Ashby.—p. 42.
Nirvanol Treatment of Chorea. W. M. Whitaker.—p. 44.
Postinfluenzal Erythema Nodosum: Five Cases. V. Boganovitch.—p. 56.
Streptococcal Allergy in Acute Rheumatic Infection. R. A. MacDonald.—p. 60.
*Enterogenous Methemoglobinemia (Congenital) in Child: Case. R. Miller.—p. 73.
Congenital Pyloric Stenosis: Case. R. E. Steen.—p. 76.
Chlorides in Cerebrospinal Fluid in Cases of Meningitis. F. S. Fowweather.—p. 80.

Rheumatic Pericarditis in Childhood.—Findlay et al. assert that although pericarditis may occasionally occur as the sole manifestation of rheumatism, or during the course of an attack of chorea, or even, but still more rarely, in an individual who has never had any other rheumatic manifestation than chorea, the association of pericarditis and chorea is anything but close, and, so far as rheumatism is concerned, arthritis is the almost invariable precursor or accompaniment of pericarditis. To speak of either arthritis or chorea being responsible for pericarditis engenders a totally wrong conception of the rheumatic infection. Pericarditis, just as endocarditis, arthritis and chorea, and also rheumatic nodules, is a manifestation of the rheumatic infection—the one is not dependent on the other but these are the various seats of election for the development of the rheumatic reaction; and, as is known only too well, they may, especially during childhood, with the possible exception of nodules, appear in any sequence.

Calcium and Phosphorus Metabolism in Older Children on Mixed Diet Including Large or Small Quantity of Milk.—Two boys and two girls were fed mixed diets including a large quantity of milk, and two other boys and two other girls a corresponding diet containing little milk. Food, urine and feces were collected quantitatively for four day periods and analyses were made by Courtney and Brown for fat, calcium, magnesium and phosphorus in order to determine the excretion and retention of these constituents. The low milk diets, even with the inclusion of eggs and vegetables, were found to provide far too little calcium and phosphorus for the necessary retention of these elements. The results were found to fall into two distinct groups for each kind of diet. In one group on each calcium and phosphorus level the excretion of calcium and phosphorus, except urinary phosphorus, on the low intake was much less than in the other on the same diet, and the retention was correspondingly better. The large urinary excretion of phosphorus in one group is difficult to explain. These observations afford evidence that children on the same diet and apparently in equally good condition can on occasion differ so materially in their metabolic processes that one may lose through the feces far larger amounts of calcium and phosphorus than the other, even to the point of suffering a serious loss to the body when the intake of these elements is low.

Calcium and Phosphorus Concentration in Small and Large Intestines of Children.—The material investigated by Courtney was obtained from thirty-four postmortem examinations of the intestinal tract of children and represents as regards the intestinal tract both normal and pathologic conditions. In thirteen cases signs of active rickets were reported, eight in the group showing acute intestinal symptoms. The group with normal intestines included cases of decomposition, prematurity, bronchopneumonia, erysipelas, nephritis, cellulitis, encephalitis, meningitis, hydrocephalus, scurvy, hemorrhagic disease of the

new-born and cerebral hemorrhage following injury. The gastro-intestinal cases were described as acute intestinal intoxication, fermentative diarrhea, one pyloric stenosis, and one intestinal obstruction. The ages ranged from 12 days to 4¾ years, with the larger number between 2 months and 1 year. The results reported indicate that there was greater excretion or less absorption of calcium than of phosphorus in the large intestine in all the children studied. It also appears probable that the calcium concentration in the large intestine was due in considerable proportion to calcium not bound to phosphorus. In the children with abnormal intestinal conditions there was much less difference between the large and the small intestine in both calcium and phosphorus concentration than in those without intestinal symptoms.

Salt Content of Woman's Milk in Cases in Which Use Was Not Beneficial.—Analyses to determine the content of the various salts were made by Courtney and Brown in thirty samples of woman's milk which appeared to have an unfavorable effect on the infant or infants taking it; in seventeen samples in cases in which the infants were suffering from rickets and tetany, and in thirteen in which there were other unfavorable symptoms supposedly due to the breast feeding. The milks in the tetany and rickets group showed a tendency to be low in calcium and magnesium and high in sodium content. In the other group the tendency was to be high in total salt, sodium, potassium and chloride, though there were some markedly abnormal values found in respect to all the salts determined. Only two milks of this group showed no striking abnormality. Whenever the blood calcium and phosphorus were determined and one or both were found to be lower than the normal, the calcium content of the milk was either lower than the normal limit or at least lower than the normal average. The diets of all but one of the mothers represented in the tetany and rickets group were looked into and all were found to be more or less deficient in one or more of the following points: total quantity of milk, sources of vitamins, especially the fat soluble vitamin, and total caloric value of intake. Three were deficient in all three respects. In the group in which the infants showed unfavorable symptoms other than those of tetany and rickets, with two exceptions the milk analyses showed abnormal values for two or more salts, in many cases extremely abnormal values. Two of the mothers were accustomed to taking large amounts of table salt with their food.

Enterogenous Methemoglobinemia (Congenital) in Child.—A case of enterogenous cyanosis due to methemoglobinemia in a girl first seen at the age of 9 years is reported by Miller. The cyanosis is said to have been present at birth. It was attributed to congenital heart disease. Apart from the abnormal color the girl appeared in good health. The absence of any symptoms of illness is perhaps to be attributed to the comparative absence of anemia. The heart showed an enlarged left ventricle; there was no erythrocytosis. The methemoglobinemia was accompanied by obstinate constipation, excessive indicanuria and some persistent low fever at night. The degree of cyanosis varied directly with that of the indicanuria. Considerable improvement, but by no means a complete cure, resulted from the daily use of enemas of potassium permanganate solution (1:4,000). Other measures appeared useless.

British J. Actinotherapy & Physiotherapy, London

4: 257-278 (March) 1930

Amount of Ultraviolet Radiation Necessary to Cure Rickets. G. H. Maughan and J. A. Dye.—p. 260.
Treatment of Injuries to Muscles, Joints and Tendons. W. C. Douglass.—p. 265.
Flatfoot and Treatment by Muscular Reeducation. E. Cyriax.—p. 267.
Penetration of Light. R. K. Brown.—p. 269.
Obesity Treatment by Faradism. N. Daniels.—p. 271.
Medical Review of British Spas: VIII. Woodhall Spa. M. B. Ray.—p. 273.

British J. Urology, London

2: 1-108 (March) 1930

Hernia of Bladder: Forty Cases. C. P. G. Wakeley.—p. 1.
Surgical Treatment of Chyluria and Filariasis. F. Kidd.—p. 15.
Foreign Bodies in Urinary Bladder. H. P. W. White.—p. 27.
Rôle of Pyelography in Tuberculous Nephritis. A. W. Adams.—p. 36.
Aberrant Retropelvic Artery. A. Sebba.—p. 42.
Urethral Calculi: Two Unusual Cases. E. Hess.—p. 44.
Radiologic Notes: Intravenous Pyelography. F. Kidd.—p. 47.

Glasgow Medical Journal

32: 113-168 (March) 1930

Bright's Disease, Hyperpiesis and Hyperpiesia. T. K. Monro.—p. 113.
*Mortality from Pernicious Anemia in Scotland: Influence of Liver Treatment. P. L. McKinlay.—p. 133.
Etiology of Conversion Hysteria. R. S. Gibson.—p. 141.

Mortality from Pernicious Anemia in Scotland: Influence of Liver Treatment.—The Scottish experience with regard to mortality from pernicious anemia, McKinlay says, shows that the death rates in both sexes increase with age up to 75 years, but thereafter show a decided decrease. Females show a higher mortality than do males from this cause, the excess being most apparent at the reproductive ages, from 15 to 45 years, at which the female rate is nearly three times as high as the male death rate. The general female excess, irrespective of age, is about 30 per cent. The disease shows wide variations in incidence throughout the country, the range being represented by standardized death rates of 143 (highest) and 35 (lowest) per million persons. Seasonal variations of mortality, a distinct feature of the statistics of England and Wales, are not so apparent in the Scottish figures, which show an excess of mortality in the first six months of the year. From the beginning of the present decennium up to 1926 practically no change of note occurred in the incidence of the disease. Toward the end of 1927 a decline in mortality set in. The decline steadily increased in magnitude throughout the following year, affected males and females almost equally to the extent of something like 35 per cent of the average mortality for the period 1921-1926, and took place chiefly at young adult and middle ages. Geographically this improvement was practically restricted to counties with efficient hospital facilities. The decline in the death rate, moreover, began in the absence of change in any influential factor other than the introduction during 1927 of a new method of treatment. All the evidence presented seems consistent with the view that the declining mortality and the extension of liver treatment are causally related phenomena, and the trend of the death rate revealed by the most recent mortality returns suggests that still further amelioration may confidently be expected.

Indian Medical Gazette, Calcutta

65: 61-120 (Feb.) 1930

*Keratolysis Plantare Sulcatum: Lesion Due to Actinomycotic Fungus. H. W. Acton and C. McGuire.—p. 61.
*Rheumatic Infection as Cause of Mitral Stenosis Among Young Indians. H. Stott.—p. 65.
Safeguards and Points of Technic in Extraction of Senile Cataract with Capsulotomy. M. D. Anklesaria.—p. 67.
Ars Gynaecologica. C. B. Green-Armytage.—p. 71.
Centepeda Orbicularis. R. Bahadur and H. K. Sinha.—p. 75.
Effect of Radiation Therapy on Mediastinal Tumors. S. Mitra.—p. 79.
Use of Standardized Preparation of Total Alkaloids of Kurchi Bark in Amebic Dysentery. A. R. Majumdar.—p. 80.
Suitability of Paris Green as Anopheline Larvicide as Applied to Punjab Conditions. M. Yacob and K. S. Shah.—p. 84.
Treatment of Naga Sores with Phenol. S. K. Biswas.—p. 88.
Gemination of Teeth: Case. P. S. Khosla.—p. 89.
Jarisch Herxheimer Phenomenon Following Injection of Arsphenamine: Case. R. C. Mahajan.—p. 89.
Dentigerous Cyst: Case. C. McIver and N. Ghosh.—p. 89.

Keratolysis Plantare Sulcatum: Lesion Due to Actinomycotic Fungus.—In eight patients examined by McGuire's method, Acton and McGuire found *Actinomyces bovis* of the American Type Culture Collection. They have found similar fungi in certain cases of intertrigo, paronychia and plaque-like hyperkeratosis on the palms and soles.

Rheumatic Infection as Cause of Mitral Stenosis Among Young Indians.—The generally accepted view that syphilis, whether acquired or congenital, is not a cause of mitral stenosis is upheld by Stott. His own experience coincides in indicating that mitral stenosis of long standing is a most unusual sequel, even if it occurs, of such infections as those caused by streptococci, pneumococci, scarlet fever or influenza. Degenerative disease is not a cause of mitral stenosis, nor is there sufficient evidence to assign this lesion to a congenital defect. There is then nothing in an examination of the other possible causes of mitral stenosis that weighs against the

probability of unrecognized subacute rheumatic infection among Indian children being the great cause of mitral stenosis in young Indian adults.

Journal of Hygiene, London

29: 357-455 (Feb.) 1930

Titration of Scarlet Fever Toxin. R. A. O'Brien.—p. 357.
*Cancer and Other Causes of Death in Glasgow Royal Infirmary. J. S. Faulds.—p. 362.
*Relative Potency of Carcinogenic Tars and Oils. C. C. Twort and J. M. Twort.—p. 373.
*Serologic Diagnosis of Typhoid and Paratyphoid Fever. A. Pijper.—p. 380.
Epizootic Among Veld Rodents in De Aar and Neighboring Districts of Northern Cape Province. J. A. Mitchell.—p. 394.
*New Serologic Type of Salmonella. S. H. Warren and W. M. Scott.—p. 415.
Influence of Certain Dietary Supplements on Nutrition of African Native. F. C. Kelly and J. M. Henderson.—p. 418.
Id. J. M. Henderson and F. C. Kelly.—p. 429.
Id. J. M. Henderson and F. C. Kelly.—p. 439.
Organisms Serologically Related to S. Enteritidis Gärtner. P. B. White.—p. 443.
Id. E. P. Hicks.—p. 446.

Cancer and Other Causes of Death in Glasgow Royal Infirmary.—Faulds feels strongly that statistics compiled from necropsy records alone proving that malignant disease is increasing are fallacious, unless they are properly controlled. Statistics reviewed by him failed to demonstrate any spectacular increase in malignant disease as a cause of death. Malignant disease of the colon has increased more than that of any other site.

Relative Potency of Carcinogenic Tars and Oils.—A method has been devised by the Tworts whereby the potency of any given carcinogenic agent can be compared with that of a standard agent. This is called the standard carcinogenic potency of the agent (P). The relative potency of the agent (R P), calculated from P, permits one to estimate the effect on the agent of different chemical treatments and dilutions, the percentage increase or decrease in activity of the agent being at once shown. A unit of carcinogenicity (U. C.) has been established, and a concentration of 500 carcinogenic units per cubic centimeter is considered to induce the maximum relative response in animals when the agent is applied twice a week.

Serologic Diagnosis of Typhoid and Paratyphoid Fever.—Pijper comments on the inefficiency of the Widal reaction as a diagnostic test and urges its replacement by a more satisfactory method. Such a method, he says, is to be found in the application of the discoveries and theories on agglutination of Weil and Felix, and of Olitzki. He discusses a diagnostic method called qualitative receptor analysis in which he employs the O agglutinins.

New Serologic Type of Salmonella.—The culture representing the new type described by Warren and Scott was obtained by one of them under rather unusual circumstances. Three fatalities occurred at intervals of four and six months among the children of one family. In each case death was due to acute gastro-enteritis and supervened within twenty-four hours of the onset of the illness. On the death of the third child a bacteriologic examination was made postmortem and *Salmonella aertrycke* was found in abundance in the organs. Specimens of feces from the surviving members were examined. From the mother's specimen a salmonella was isolated agglutinating with the serum not only of *S. paratyphi B* but also of *S. enteritidis* (Gaertner). This salmonella the authors propose to call *S. newcastle.*

Medical J. of Australia, Sydney

1: 201-236 (Feb. 15) 1930

*Treatment of Perforated Gastric and Duodenal Ulcers. H. Searby.—p. 202.
*Experimental Considerations in Perthes' Disease. R. V. Graham.—p. 207.
Sterility in Women. C. Coghlan.—p. 209.
Pitfalls in Oral Radiography. G. F. S. Dansey.—p. 211.
*Investigation into Alleged Therapeutic Properties of Vinca Rosea in Treatment of Diabetes. A. B. Corkill and A. Doutch.—p. 213.
Contact Lenses in Conical Cornea. J. R. Anderson.—p. 216.
Perthes' Disease. F. W. Carter.—p. 217.
Abnormality of Uterus: Three Cases. H. A. Ridler.—p. 218.

Treatment of Perforated Gastric and Duodenal Ulcers.—Searby does not believe it advisable to do more than close the perforation at one operation. Adequate oversewing of the perforation will prevent leakage and will not result in undue constriction of the stomach or duodenum. Probably about 25 per cent of patients are cured by simple oversewing of the perforation. In such cases gastrojejunostomy or other surgical treatment directed toward the cure of the ulcer is unnecessary. The mortality of the operation of gastrojejunostomy in the presence of a perforation in the series of more than a hundred cases reviewed by Searby was 16 per cent, whereas the mortality of simple suture in cases similar as regards age and duration of the perforation was 3 per cent. The results of gastrojejunostomy done at the time of the perforation were little better in the cases reviewed than those obtained by simple suture. If symptoms recur after closure of the perforation, the ulcer can be treated medically or surgically, as is deemed advisable. It is considered that a larger percentage of permanent cures will be obtained in this way. Drainage should be used in many cases to remove infected material from the peritoneal cavity.

Experimental Considerations in Perthes' Disease.—Experiments were made by Graham with the object of determining what part was played in the causation of the pathologic changes observed in Perthes' disease by changes in the blood supply conveyed to the growing femoral epiphysis through the ligamentum teres. He found that division of the ligamentum teres in goats is followed by changes that vary according to the age at which the division takes place and the time elapsing between division of the ligament and removal of the head of the femur for observation. Photographs exhibited demonstrate the fact that the changes following this division are almost negligible in goats above the age of 6 months. In younger goats necrosis and absorption of bony trabeculae ensue in an area underlying the attachment of the ligamentum teres to the head of the femur, which is in shape roughly that of an inverted cone. In most instances there is a definite flattening of the epiphyseal plate in sagittal section. This apparently results from a disproportion between the rate of growth of the cartilage cells on the two sides of the epiphyseal plate; at present specimens suggest that this leads to deformation of the cap similar to that in the early stages of Perthes' disease. These changes tend to undergo natural repair when the goat is allowed unrestricted liberty on an ordinary diet. An obvious conclusion also is that the ligamentum teres diminishes in importance as a source of blood supply to the femur as the age of the animal increases. Roentgen evidence of changes following this operation was inconclusive even in the presence of definite early macroscopic changes. In this series it was impossible to produce typical Perthes' disease by simple division of the ligamentum teres.

Investigation Into Alleged Therapeutic Properties of Vinca Rosea in Treatment of Diabetes.—Corkill and Doutch did some experimental work on rabbits with an extract of vinca leaves and confirmed the negative results reported by Lee and Drew. Then they administered the extract to fourteen diabetic patients, but it had no beneficial effect on the diabetic condition. In one other case in which vinca was administered, it appeared to diminish the glycosuria, but this effect was probably indirect. Vinca acted as an ideal purgative in patients who suffered from constipation.

Tubercle, London

11: 241-288 (March) 1930

Recent Continental Views of Pathogenesis of Tubercle. E. Zimmerli and F. A. H. Simmonds.—p. 241.
Etiology of Serous Effusion in Artificial Pneumothorax. W. Stobie.—p. 253.
Treatment of Pleural Effusion in Artificial Pneumothorax. F. G. Chandler.—p. 255.
*Glanders of Lungs Simulating Pulmonary Tuberculosis: Case. E. H. A. Pask.—p. 257.

Glanders of Lungs Simulating Pulmonary Tuberculosis.—Pask's case was of the chronic type and closely simulated pulmonary tuberculosis. Death occurred six months after the onset of the chest symptoms. The patient, aged 35

years, had been working on a sheep ranch for two years, and had had charge of two horses. Eighteen months before the patient's admission, one of the horses had glanders. The horse completely recovered, and he was working with it twelve months afterward when he became sick with what he described as an attack of influenza, which lasted two weeks. When he tried to get up out of bed he could not put his heel to the ground. He noticed a small lump in the center of the calf of the right leg, and was unable to walk about. This persisted for two months, and as he was not getting any better he was admitted to the hospital. A week after admission a soft lump appeared in the left leg; this was needled and the fluid examined. A guinea-pig inoculated with the fluid died of glanders of the testicles.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

(54): 27-76 (Jan. 27) 1930

*Nephritis with Hypochloremia: Treatment by Salt Diet. C. Achard.—p. 27.
Subacute Nephritis with Chloride Retention: Case. L. Blum and van Caulaert.—p. 34.
Malignant Granuloma with Symptoms of Pleurisy. C. Achard and A. Escalier.—p. 39.
*Cancer of Pancreas with Duodenal Involvement (Syndrome of Stenosis Below Vater's Ampulla). M. Bariéty, P. Augier and L. Sebileau.—p. 43.
Periarteritis Nodosa (Kussmaul's Disease) with Splenic and Intestinal Manifestations. J. Hutinel, F. Coste and A. Arnaudet.—p. 46.
*Bronchiectasis in Children, Similar to Mediastinal Pleurisy. J. J. Leunda and A. Carrau.—p. 58.
Rheumatismal Symptoms in Legs with Adenopathy: Spontaneous Recovery (Mild Variety of Still-Chauffard's Disease). P. Chevallier and G. Heuyer.—p. 65.
Transmission of Syphilis by Blood Transfusions. C. Aubertin and J. Fleury.—p. 69.

Nephritis with Hypochloremia: Treatment by Salt Diet.—Achard relates the clinical history of a woman, aged 37, who entered the clinic because of persistent anuria. Five days previously she had had abdominal pain coincident with respiratory disturbances, vomiting, malaise and tremor. Hematuria was noted and examination disclosed that 2 Gm. of albumin was excreted per thousand cubic centimeters, together with bile pigment and indican. Numerous degenerated leukocytes were likewise seen. The patient had been subject to sore throat since she was a child. An especially severe attack had occurred twenty months previously, complicated by stomatitis; pain in the kidneys was noted coincident with hematuria and albuminuria. She voided small amounts of concentrated urine within the next days. It was only after the administration of sodium chloride, however, that her condition slowly improved and was finally restored to normal after a period of diuresis lasting seven days, during which time the patient lost 5 Kg.

Cancer of Pancreas with Duodenal Involvement (Syndrome of Stenosis Below Vater's Ampulla).—Bariéty et al. point to the difficulty of diagnosis of cancer of the pancreas. Stenosis due to adhesion of the mesentery and tumors of the duodenum may be considered a guide for diagnosis. The prognosis is unfavorable and operation can only be palliative. The authors favor jejunoduodenostomy, which they performed on their patient, aged 65. Although the immediate results of the operation were good, with healing of the wound by first intention and recovery of appetite, the patient died on the fiftieth day after the intervention. A blood culture had disclosed hemolytic streptococci.

Bronchiectasis in Children, Similar to Mediastinal Pleurisy.—On the basis of a discussion of the clinical histories and results of roentgen examination with the aid of iodized oil in four children, Leunda and Carrau point to the difficulties of differential diagnosis between the two diseases. This was especially enhanced because of absence of expectoration in children. Syphilis and tuberculosis could be eliminated except in one patient, who had a positive cutireaction for tuberculin. Roentgen examination showed a hilus shadow usually typical of mediastinal pleurisy. Injection of iodized oil revealed the condition of dilatation of the bronchi. In some cases it was complicated by chronic parenchymatous lesions with or without pleurisy.

Gynécologie et Obstétrique, Paris

20: 693-788 (Dec.) 1929

Precancerous State of Cervix Uteri. R. Keller and L. van de Vyver.—p. 695.
*Epithelioma of Cervix Uteri: Bacteriologic Examination in Relation to Radium Therapy. R. Vinzent and O. Monod.—p. 709.
*Vesicovaginal Fistula as Late Result of Radium Therapy. P. Rullé.—p. 720.
Fibromyoma of Uterus. Morosowa and Saweliewa.—p. 724.
Homoplastic Grafting of Ovaries: Eighteen Cases. G. Gambarow.—p. 743.
Headaches of Hypophyseal Origin During Pregnancy. D. M. Olascoaga.—p. 750.
*Umbilical Hemorrhage of New-Born Infants. P. Baron.—p. 757.

Epithelioma of Cervix Uteri: Bacteriologic Examination in Relation to Radium Therapy.—Vinzent and Monod made bacteriologic studies in 150 patients with carcinoma of the uterus and report the results of these investigations in 116 who during treatment by radium irradiations had shown an increase in temperature above 38 C. (100.4 F.). Besides isolation of aerobic strains in forty-seven patients the anaerobic bacteria were likewise studied. In twenty-eight patients secondary infections in the course of the treatment occurred. Although no specific type of bacteria was noted as responsible for these complications, the micro-organisms were found to become virulent during irradiation. Hemolytic streptococci predominated. The result of vaccine treatment was not satisfactory, however, and the authors point to the inability to control such infections as yet.

Vesicovaginal Fistula as Late Result of Radium Therapy.—Rullé's patient, aged 56, had nine years previously had irregular vaginal hemorrhage. However, it was only six months later that she entered the clinic. Examination disclosed an inoperable cancer and radium irradiations were administered for a period of five weeks. The patient was considerably relieved of all symptoms and returned to her home. Examination three months later showed cicatrization of the right parametrium and a stricture of the vagina. A second period of radium therapy was established. A biopsy done six months later showed inflammatory tissue around the rectum but no signs of cancer were noted. A small ulceration caused by radium therapy was seen two months later. The patient remained free from disorders for one year and eleven months. After that time she observed that defecation occurred by way of the vagina; it became less frequent, with spontaneous partial restoration of rectal evacuation. Several years later, however, the urine was likewise voided vaginally and she demanded operation. Examination disclosed that in spite of the protracted state of the disease and its treatment, cicatrization of the cancer was not yet complete. Therefore expectant treatment seemed indicated.

Umbilical Hemorrhage of New-Born Infants.—On the basis of his personal experience in two infants in whom the hemorrhage occurred twelve hours after birth, Baron points out that this accident can take place without mechanical trauma or an incriminating infection. A congenital anomaly of the umbilical artery may serve for its explanation. In both infants the author was able to ligate the vessel by exteriorizing a greater part of the umbilicus and inserting a purse-string suture.

Paris Médical

1: 49-76 (Jan. 18) 1930

Dermatology: Annual Review. G. Milian and L. Brodier.—p. 49.
Unusual Type of Psoriasis and Parakeratosis Psoriasiformis. H. Gougerot and P. Blum.—p. 56.
Buccal Lichen Planus. P. Fernet.—p. 59.
Dyshidrosis. G. Garnier.—p. 63.
*Immunization with Bacillus of Cutaneous Gangrene. G. Milian.—p. 68.

Immunization with Bacillus of Cutaneous Gangrene.—Milian reports that he was able to immunize rabbits by intravenous injection of serum obtained from animals who had been infected with *Bacillus gangrenae-cutis.* This bacillus was first isolated in 1917 in a patient with fulminating gangrene of the genitalia and has been the object of repeated investigation since then. Milian reviews his papers on the subject, giving a full description of the disease and the characteristics of the causal micro-organism.

1: 77-92 (Jan. 25) 1930

Present Status of Problem of Dyspepsia. E. Chabrol.—p. 77.
*Effect of Insulin on Arterial Tension. G. Finck.—p. 85.
*Postvaccinal Lymphangitis Cured by Diathermy. F. Munner.—p. 88.
Prognosis in Treatment of Syphilis. A. Galliot.—p. 89.

Effect of Insulin on Arterial Tension.—His personal experience in seven patients whose clinical histories are recorded leads Finck to direct attention to insulin as a therapeutic agent for lowering arterial pressure caused by atheromatous degeneration of the walls of the arteries. The explanation of its action is disputable as yet; however, the author believes that in certain instances the destruction of cholesterol deposits is responsible. In other patients the lowering of pressure was accompanied by symptoms of shock consequent to the injection of insulin.

Postvaccinal Lymphangitis Cured by Diathermy.—In Munner's patient, aged 27, the symptoms developed five days after smallpox vaccination in the middle third of the thigh. There was excessive pain, the inguinal lymph nodes were enlarged and edema was noted. Diathermy was applied in six treatments of thirty minutes' duration each over a period of four days. The patient stated that she was relieved from pain after the first treatment.

Presse Médicale, Paris

38: 129-144 (Jan. 29) 1930

*Results of Subcutaneous Vaccination with B C G in Four Hundred and Forty-Three Young Persons. J. Parisot and H. Saleur.—p. 129.
*Resonance in Prehepatic Region in Gastroduodenal Ulcers Perforated into the Peritoneal Cavity. R. Soupault.—p. 131.
Emetine Hydrochloride in Treatment of Pulmonary Suppurations of Nonamebic Origin. G. Nubert and D. Branisteanu.—p. 132.
Postvaccinal Encephalitis. P. Pagniez.—p. 134.

Results of Subcutaneous Vaccination with B C G in Four Hundred and Forty-Three Young Persons.—The results of an extensive survey are reported by Parisot and Saleur. There were forty-six persons 12 or more years of age, sixteen infants less than 1 year old, with the exception of new-born infants, and fifty-seven between the ages of 1 and 2 years; the others were between the ages of 3 and 11 years. One hundred and fifty-four persons had been vaccinated more than two years previously and 289 more than one year before. The results of cutireaction tests on 169 persons who had been immunized from three weeks to twenty-seven months previously showed that the cutaneous allergy appeared most frequently between one month and six weeks after inoculation. It was found to be positive in 105 persons, or in 62 per cent. This corresponds to the authors' previous observations on the results of immunization of infants by the ingestion of B C G. With the exception of new-born infants the morbidity and mortality of tuberculosis in vaccinated persons of all ages and living in both healthful and tuberculous environments was found to remain 0.

Resonance in Prehepatic Region in Gastroduodenal Ulcers Perforated into the Peritoneal Cavity.—Soupault reports that he was invariably able to distinguish this symptom in twenty-one patients in whom perforations had occurred. It is caused by the escape of air from the stomach and duodenum through the perforation into a space between the liver and the diaphragm. Although the symptom has been described before, Soupault considers that it has not been given its proper value as a guide in diagnosis. In two additional patients a diagnosis of perforated ulcer was made on the basis of other symptoms but without the resonance being heard. In both instances operation revealed that the diagnosis was incorrect. One patient had acute gangrenous cholecystitis, whereas in the other patient an unidentified abdominal condition, possibly caused by tuberculosis, had persisted.

38: 161-192 (Feb. 5) 1930

Intramural Calculi of Gallbladder. A. Gosset, P. Duval, L. Bertrand and F. Moutier.—p. 161.
Extra-Articular Arthrodesis of Hip. P. Mathieu.—p. 165.
*Viosterol: Experimental Studies. C. Levaditi and Li Yuan Po.—p. 168.
Relation Between Tumors of Thyroid and Exophthalmic Goiter. M. P. Weil and M. Iselin.—p. 173.
*Mycosis Fungoides. L. Berger and A. Vallée.—p. 177.
*Angiomatous Tumors of Central Nervous System. G. Roussy and C. Oberling.—p. 179.
Lesions of Cervix Uteri in Virgins and Young Nulliparous Women. F. Jayle.—p. 185.
Coagulation and Carbonization. M. Vignat.—p. 186.
Relation Between Asthma and Ultravirus of Tuberculosis. E. Sergent and R. Kourilsky.—p. 187.
*New Technic of Gastrostomy. Gernez and Ho-Dac-Di.—p. 191.

Viosterol: Experimental Studies.—Levaditi and Li Yuan Po studied the toxicity of viosterol administered perorally or by injection in various laboratory animals. Their experiments were made on forty-four mice, twenty-three rabbits, three young cats, two monkeys and several chickens. Although viosterol was given in higher doses per unit of body weight than the dose used therapeutically in man, there were no harmful effects. The authors therefore conclude that rickets, osteomalacia, anemia or fractures can safely be treated by the administration of viosterol without danger of immediate or late complications arising. The authors likewise analyzed the mechanism of calcification in certain organs and found that heterotopic calcification is usually localized in the kidneys or the aorta and that it is variable according to the individual. It is increased with addition of the active principle. However, heterotopic calcification is not indicative of the degree of toxicity, for the postmortem examination of rabbits and mice that died with symptoms of acute intoxication after the administration of large doses of viosterol did not reveal abnormal areas of calcification in the tissues or organs. On the other hand, it was found that calcification can be initiated in lesions due to bacteria or an ultravirus (as in tuberculosis or in chronic encephalitis). The problem of resorption of calcium deposits in the aorta or in the kidneys will be investigated at a later date.

Mycosis Fungoides.—On the basis of four personal cases and a study of the literature, Berger and Vallée discuss the microscopic aspect of this disease. Two men, aged 38 and 72, respectively, and two women, aged 31 and 71, respectively, all had approximately the same clinical histories. The authors point out that various other diseases such as leukemia, lymphosarcoma and granuloma present identical clinical symptoms, but it is only in systematized hyperplasia that the diagnosis of mycosis fungoides can be made on the basis of microscopic examination. According to the authors, the localization of the histocytic hyperplasia in the loose connective tissue surrounding the blood vessels and nerves and the participation of the endothelium point to involvement of the reticulo-endothelial system of the skin which can secondarily extend to other parts of the reticulo-endothelial system. In some cases extensive involvement of this system is manifested in the blood by a monocytosis showing more or less pathologic cells.

Angiomatous Tumors of Central Nervous System.—Roussy and Oberling point out the close relation that can exist between proliferations of the tissue of the neuroderm and of the blood vessels and that therefore angiomatosis of the central nervous system may be related to skin lesions of nervous origin. The limits of the entity of the disease which has been described by Lindau should be extended to include the symptomatology of Recklinghausen's disease. The authors base their conclusions on a review of the literature and seven personal cases.

New Technic of Gastrostomy.—A modification in the technic of gastrostomies is described by Gernez and Ho-Dac-Di. They point out that there is a tendency to place the opening of the stomach too far down and too near the pylorus, which leads more easily to incontinence. Taking into consideration the air pocket in the fundus, the authors concluded that placing the opening at this level according to the Witzel method would prevent direct contact of the gastrostomy opening with the gastric contents. An oblique incision through the abdominal wall would likewise prevent incontinence of gastric juice with its resulting complications. A description of the technic with illustrative drawings is given.

Revue d'Orthopédie, etc., Paris

17: 1-100 (Jan.) 1930

*Physiopathology of Pott's Disease. J. Calvé and M. Galland.—p. 5.
Congenital Platyspondylisis and Traumatic Lesions of Vertebra. Tavernier and Massias.—p. 25.
Idiopathic Cysts of Humerus: Two Cases. M. Oudard.—p. 37.
Cyst in Lateral Meniscus of Knee. A. Felliasson.—p. 44.
Rachitic Deformities of Legs in Children. A. Delahaye.—p. 48.

Physiopathology of Pott's Disease.—Calvé and Galland discuss the mechanical aspect of the disease, which is characterized by inhibition of function of the intervertebral disks. In the course of the disease a lateral hingelike joint with a seesaw action is formed at the level of the articular processes. The shape of this joint is dependent on the posterior intervertebral surfaces and on the shape of the body of the vertebra. In lumbar Pott's disease spontaneous correction of the condition can occur; this, however, is not the case in dorsal Pott's disease. Small vertebra are predominant in this case, leading to deficient contacts. The vertebra are likewise constantly mobilized through respiration and possess a narrow spinal canal through which compression of the medulla can occur, leading to paraplegia. In view of these consequences the authors point to the importance of adequate therapy in the dorsal type of the disease.

Revue Médicale de la Suisse Romande, Lausanne

50: 1-64 (Jan. 25) 1930

Tuberculosis of Genito-Urinary Tract Without Tubercle Formation. H. Wildbolz.—p. 1.
Intraspinal Tumors. E. Long.—p. 16.
*Relation Between Tuberculosis and Gangrene of the Lungs. M. Roch and G. Bickel.—p. 25.
Effect of Substances Other Than Insulin on Carbohydrate Metabolism. G. L. Piotrowski.—p. 34.

Relation Between Tuberculosis and Gangrene of the Lungs.—Roch and Bickel do not favor the opinion expressed by various modern authors that the association of tuberculosis and pulmonary gangrene is of more frequent occurrence than has been stated in the older literature. The authors base their conclusions on the study of necropsy observations in 4,806 patients who died of pulmonary diseases within the last twenty-five years. As a result of this study they found the diseases coexistent in sixteen patients. Because of the fetid breath and the typical aspect of the expectoration, the diagnosis of pulmonary gangrene was easily made. The tuberculosis, on the other hand, was frequently latent and in one third of the cases was revealed only at necropsy. In approximately 10 per cent of these sixteen cases they were able to trace a true pathogenic relation between the gangrene and tuberculosis. These results have been confirmed by careful study of the clinical histories reported in the literature. In those cases in which gangrene appeared as a complication of tuberculosis, it was noted that the latter disease was not in a progressive condition but that cicatrization was present and in many instances evolution toward recovery was apparent.

Schweizerische medizinische Wochenschrift, Basel

60: 141-164 (Feb. 15) 1930. Partial Index

Relation Between Traumatic Injuries and Development of Tumors. H. Iselin.—p. 141. C'td.
*Relation Between Weather Conditions and Attacks of Asthma. J. L. Burckhardt.—p. 149.

Relation Between Weather Conditions and Attacks of Asthma.—Following careful observations, Burckhardt comes to the conclusion that in the high altitude climate in Davos, either the atmospheric pressure, the moisture content and the impurities of the air, the irradiation intensity, and the velocity of the wind do not influence the asthma attacks at all or their influence is negligible. At the time of sudden changes in temperature, asthma attacks are comparatively frequent. However, this is not a result of the colds or the catarrhs that develop at this time, because the asthma attacks occur during the change in temperature and sometimes even seem to precede it. It is assumed that a disturbance in the atmospheric electricity that develops especially on rainy days, during snowfall and during thunder storms is a causal factor in attacks of asthma.

60: 165-188 (Feb. 22) 1930

Relation Between Traumatic Injuries and Development of Tumors. H. Iselin.—p. 165. C'cn.
*Intravenous Administration of Fermented Tuberculin. A. Komis.—p. 176.
Hormonal Treatment of Tuberculosis. E. Tomor.—p. 177.
Studies on Leptothrix and Actinomyces. B. Galli-Valerio and M. Bornand.—p. 179.

Intravenous Administration of Fermented Tuberculin.—Komis treated tuberculous patients with fermented tuberculin. Old tuberculin is completely fermented in a solution of Hansen's fluid, the process requiring about one month. The author asserts that it reduces the toxicity of the tuberculin, but the specific antigenic properties are retained. Formerly he injected the fermented tuberculin subcutaneously. Later he attempted intravenous injection. Following experiments on animals he employed the intravenous method in patients, and he found that it brings better therapeutic results than the subcutaneous administration. The injections are begun with small quantities and then they are gradually increased. Concerning the immediate effects of the intravenous injection, the author states that in some patients fainting, vomiting and headaches resulted. However, these disturbances were not severe, they disappeared quickly, and serious complications did not develop. The fever reaction was somewhat belated after intravenous injections. The fever developed from twelve to twenty hours after the treatment. The temperature increase was 1 degree C. and lasted from twelve to sixteen hours. After that it decreased below the level before the injection. The moist râles gradually disappeared.

Policlinico, Rome

37: 243-282 (Feb. 17) 1930. Practical Section

*Tuberculosis in a True Solitary Kidney with Vascular Anomalies. N. Spinelli.—p. 243.
Renal Tuberculosis of Atypical Evolution. O. Pepi.—p. 246.
Hematuria from Blood Stasis Due to Inflection of Renal Pedicle. G. Baggio.—p. 251.
What Importance Have Digestive Tests for Diagnosis of Gastric Disorders? V. de Benedetti.—p. 255.
Comment on New Apparatus for Pneumothorax. G. Luzzatto-Fegiz.—p. 259.

Tuberculosis in a True Solitary Kidney with Vascular Anomalies.—Spinelli studied this case of tuberculosis in a true solitary kidney in relation to other anomalies existing in the same patient: vascular anomalies of the kidney; two renal arteries and two renal veins; skeletal anomalies; sacralization of the distal lumbar vertebra; split of the neural arch throughout the sacrum, and Meckel's diverticulum. He emphasizes that tuberculosis appears to have a tendency to attack defective and anomalous organs.

Rivista di Clinica Pediatrica, Florence

27: 883-962 (Dec.) 1929. Partial Index

*Effect of Intraspinal Injection of Epinephrine on Tuberculous Meningitis, Acute Anterior Poliomyelitis, Chorea, Epilepsy and Enuresis in Infants. G. Taccone.—p. 883.

Effect of Intraspinal Injection of Epinephrine.—A 1:1,000 solution of epinephrine in a 0.65 per cent solution of chlorbutanol was administered by Taccone to fifteen children, aged from 3 months to 9 years, with the following diseases: tuberculous meningitis, acute anterior poliomyelitis (during its acute stage), chorea, epilepsy and enuresis. The injections were given intraspinally. The treatment was well tolerated, and in certain cases the results were encouraging enough to justify further trials of the method, both in the diseases mentioned and in other conditions.

Archivos Latino-Am. de Pediatría, Buenos Aires

23: 901-1004 (Dec.) 1929. Partial Index

*Meningitis Caused by Pfeiffer's Bacillus in Infants. C. Pelfort.—p. 901.
*Malignant Syndrome After Scarlet Fever: Two Cases with Recovery. J. Bonaba, J. J. Dubourdieu and A. Nogués.—p. 913.

Meningitis Caused by Pfeiffer's Bacillus in Infants.—Among 3,000 infants with various diseases that Pelfort observed during a period of six years, thirty-nine had suppurative meningitis, caused by the meningococcus in eighteen cases, by Pfeiffer's bacillus in ten cases, by the pneumococcus in eight cases and by other unidentified bacteria in three cases. In thirteen of the thirty-nine cases (which correspond to the last three years), suppurative meningitis was caused by the pneumococcus in four cases, by Pfeiffer's bacillus in three cases, by the meningococcus in three cases and by unidentified bacteria in three cases. The author gives the clinical reports of these three fatal cases. In only one of the patients was the meningeal

condition apparent. The other two infants presented a grave febrile picture, apparently caused by the predominant condition (supra-epitrochlear adenitis and bronchopneumonia, respectively). The acute meningeal picture was later discovered. In the three cases lumbar puncture and examination of the cerebrospinal fluid showed the presence of Pfeiffer's bacillus. The disease lasted from sixteen to thirty days.

Malignant Syndrome After Scarlet Fever.—Bonaba et al. state that the malignant syndrome and the late infectious syndrome generally appear separately after scarlet fever. The late infectious syndrome follows the benign forms of scarlet fever, when it is benign from the onset of the disease, while the malignant syndrome follows the form of scarlet fever that shows some signs of malignancy from the initial period. In rare instances both syndromes appear in association. The differentiation of both syndromes, when associated, is of therapeutic value to indicate the proper treatment for each syndrome: epinephrine and heart tonics in the malignant syndrome, and a continued specific treatment in the infection that causes the late infectious syndrome. The authors report two cases in children, aged 10 and 9 years, respectively. In the first case the malignant syndrome was clear. The child when first observed was in such a serious condition that she gave the impression of being in the agonal period. The intravenous injection of epinephrine caused a reaction of slow improvement which finally led to recovery. In the second case the malignant syndrome was overshadowed by the association of a late infectious syndrome. Treatment with antidiphtheritic and antiscarlatinal serums and epinephrine gave good results, with final recovery.

Revista de la Asoc. Méd. Argentina, Buenos Aires

42: 645-806 (Nov.-Dec.) 1929

*Modifications of Acid-Base Equilibrium and of Ionized Calcium in Blood of Tuberculous Patients. B. Varela, P. Recarte and J. Esculies.—p. 645.
Neutral Fat and Glutathione Content of Liver Reduced in Experimental Jaundice by Obstruction of Common Bile Duct. B. Varela, Fuentes, A. Munilla and J. Duomarco.—p. 659.
Technic and Results of Dick Test. E. A. Molinelli.—p. 673.
Rôle of Streptococci in Pathogenesis of Infections. J. M. Miravent.—p. 705.
Present Status of Medication for Liver Diseases: Indications for Organotherapy. M. Soto.—p. 737.
Gold Preparations in Pulmonary Tuberculosis. R. A. Vaccarezza and F. Martinez.—p. 771.

Modifications of Acid-Base Equilibrium and of Ionized Calcium in Blood of Tuberculous Patients.—To make possible further studies on the effect of an admixture of mineral salts with the diet on the acid-base equilibrium and on the mineral content (especially calcium) of the blood serum of tuberculous patients, Varela et al. examined the blood of patients with pulmonary tuberculosis in several stages of the disease. During the evolution of pulmonary tuberculosis, even in its most grave forms, and in cases of cutaneous tuberculosis, the hydrogen ion concentration remains within strictly normal limits. The carbon dioxide content varies between 51.3 and 65.3 per cent by volume. No tendency to the development of alkalosis was noted. Both the total content of calcium in the blood serum and the ionized calcium fraction showed values within normal limits. The inorganic phosphorus and the coefficient of calcium and phosphorus do not change in the blood of tuberculous patients.

Archiv für Verdauungs-Krankheiten, Berlin

47: 1-162 (Feb.) 1930

Bacterial Flora of Healthy and Diseased Stomach. N. Henning.—p. 1.
*Acute Gastric Colic Following Gastro-Enterostomy: Treatment with Duodenal Tube. M. Einhorn.—p. 60.
Dilution and Resorption of Solutions of Various Concentrations in Stomach. H. Strauss.—p. 65.
Influence of Kind of Diet on Secretory Functioning of Stomach. M. I. Pewsner, G. L. Lewin and S. I. Tschetschulin.—p. 71.
Quantitative Determination of Pepsin in Gastric Juice in Health and Disease. W. Kemper.—p. 87.
*Secretion of Gastric Juice During Sleep. S. S. Chalfen.—p. 106.
Diagnosis of Gastritis by Demonstration of Mucus in Gastric Juice. H. Simchowitz.—p. 110.
Chromocholoscopic Azorubin Test. A. J. Lebedow.—p. 131.

Acute Gastric Colic Following Gastro-Enterostomy: Treatment with Duodenal Tube.—Einhorn reports a case of benign obstruction of the pylorus in which the patient was completely relieved by a posterior gastro-enterostomy. Ten days after the operation, however, his condition suddenly became worse and alarming symptoms (vomiting, singultus, rigidity of abdominal wall and intense pain) appeared. Repeated lavage of the stomach and large, drop enemas of dextrose solution were of no avail. A duodenal tube was then introduced. During the time that the tube was in the stomach, fluid that had regurgitated from the small intestine was removed. As soon as the tube had passed into the jejunum the administration of food through it was begun. In a short time the patient felt better, and nine days later he was able to eat solid food in the normal manner without discomfort.

Secretion of Gastric Juice During Sleep.—In seven of nine patients in whom Chalfen studied the secretion of gastric juice by means of a thin tube, it was found that during sleep there was a marked decrease or complete discontinuance of the secretion. In the other two patients, who had hypersecretion, the amount of gastric juice secreted during sleep was much less than the amount secreted from 8 to 11 a. m. The author believes that these observations prove that the gastric juice obtained during fasting is representative of the true secretion of the stomach and is not the result of an irritation of the gastric mucosa by the tube.

Deutsche medizinische Wochenschrift, Berlin

56: 295-338 (Feb. 21) 1930

Modification of Phosphorus and Calcium Metabolisms by Means of Malted Grain Sprouts. M. Rubner.—p. 295.
Minimum Equipment for Obstetric Departments. W. Stoeckel.—p. 297. C'cn.
*Investigations on Functioning of Anterior Lobe of Hypophysis. B. Zondek.—p. 300.
Crystalline Form of Female Sex Hormone. E. Dingemanse, S. E. de Jongh, S. Kober and E. Laqueur.—p. 301.
*Voluntary Modification of Sex in Man. F. Unterberger.—p. 304.
Causes of Eczema. G. A. Rost.—p. 308. C'td.
Psychic Factors in Therapy of Angina Pectoris. J. H. Schultz.—p. 311.
*Demonstration of Vaccine Virus in Cerebrospinal Fluid of Rabbits After Cutaneous Vaccination. E. Gildemeister and P. Hilgers.—p. 312.

Investigations on Functioning of Anterior Lobe of Hypophysis.—Zondek first reviews the results of former researches on the hormones of the anterior lobe of the hypophysis, which were conducted partly by him and partly by other investigators. It has been found that, besides the sex hormone, the anterior lobe of the hypophysis also produces a growth hormone and a substance that influences the metabolism. Careful investigations on the action of the sex hormone revealed that it is not an elementary substance but that it contains two factors, the first one effecting ripening of the follicles and the second one effecting luteinization. These two factors are designated as A and B, respectively. Investigations on the pregnancy reaction revealed that the factor A is not characteristic for pregnancy because it may also occur in the urine when pregnancy does not exist. The author succeeded in isolating the A factor of the sex hormone. He asserts that during pregnancy both factors are excreted in the urine in great quantities. However, the A factor occurs alone in the urine when the sex glands do not function properly, namely, after bilateral ovariectomy and in the menopause. Therefore, the demonstration of this factor in the urine indicates that the sexual function has ceased. Factor A was also found in women with tumors of the genitalia. However, the presence of this factor is not an absolute indication of cancer because it is found also in cases of nonmalignant tumors.

Voluntary Modification of Sex in Man.—Unterberger examined the acid content of the vagina in women who were sterile. He found that in the majority of cases it was extraordinarily high. In order to reduce the acid content of the vagina he prescribed douches with solutions of sodium bicarbonate. In cases in which there existed no other pathologic changes of the genitalia, this treatment was usually effective, pregnancy set in and in all instances a male child was born. The latter observation led the author to assume that the degree of acidity or of alkalinity of the vagina has an influence on the

sex of the offspring. He therefore advised the use of sodium bicarbonate to men who had only daughters and who desired a son. Because irrigation of the vagina with solution of sodium bicarbonate makes it too dry, the author advises that the sodium bicarbonate should be applied to the glans penis before intercourse. This method was effective in all instances. In the fifty-three cases in which it had been applied, only boys were born. The author reasons that if a daughter is desired it might perhaps be effective to increase the acid content of the vagina by employing a solution of lactic acid. The latter theory, however, has as yet not been put to the test.

Demonstration of Vaccine Virus in Cerebrospinal Fluid of Rabbits After Cutaneous Vaccination.—Gildemeister and Hilgers experimented on two groups of rabbits. The area of vaccination was about the size of a palm. Following vaccination, the cerebrospinal fluid was tested regularly. In five of thirty-four specimens of cerebrospinal fluid examined, the vaccine virus was demonstrated. These positive reactions occurred comparatively late, namely, between the sixth and the twelfth day after vaccination. The authors assume that in rabbits the blood brain barrier becomes permeable for the vaccine virus not immediately after vaccination but at a later time. In some of the rabbits the vaccine virus was found in the urine.

Jahrbuch für Kinderheilkunde, Berlin

126: 253-374 (Feb.) 1930

Posterior Encephalocele: Changes in Brain and Spinal Cord. C. de Lange.—p. 253.
*Myeloid Leukemia with Cerebral Symptoms Caused by Increased Viscosity of Blood. W. Lengsfeld.—p. 289.
McClure Aldrich Test: Analysis. R. Barański and M. Bussel.—p. 307.
Kidney: Concentration and Dilution Powers in Nursling. J. König and E. von Lederer.—p. 331.
*Absolute Quantity of Blood in Healthy Children. P. Kiss and Z. Teveli.—p. 339.
Viosterol: Effect on Nonrachitic Organism. F. Thoenes.—p. 348.
Rickets: Treatment with Viosterol. L. Kostyal.—p. 362.

Myeloid Leukemia with Cerebral Symptoms Caused by Increased Viscosity of Blood.—Lengsfeld reports a case of myeloid leukemia in a boy, aged 7, in whom during the nine days before death the leukocyte count ranged from 710,400 to 1,074,000. Because of dizziness, vomiting and progressive choked disks, a diagnosis of a cerebral condition causing increased intracranial pressure was made and trepanation was performed. The dura mater was found tense, and when it was opened there occurred a marked prolapse of the brain, necessitating suture of the dura to the edges of the separated temporal muscle. On postmortem examination macroscopic changes were not found in the brain. Microscopic examination, however, revealed that all the cerebral blood vessels (even the smallest capillaries) were distended in places with leukocytes, almost to the exclusion of erythrocytes. The author believes that the great number of leukocytes in the blood increased its viscosity so much that it slowed the current and led to dilatation of the blood vessels, local stasis and increased intracranial pressure.

Absolute Quantity of Blood in Healthy Children.—Kiss and Teveli determined the absolute quantity of blood in twenty-eight healthy children, aged from 2 to 10 years, by means of the intravenous injection of vital red and the determination four minutes later of its concentration in the blood plasma. From the concentration of the dye in a specimen of blood plasma the absolute quantity of blood was calculated; it was found that it varied from 1,130 to 3,417 cc.

Klinische Wochenschrift, Berlin

9: 337-384 (Feb. 22) 1930

Newer Problems in Influence of Various Light Rays on Skin. A. M. Memmesheimer.—p. 337.
*Cancer Antibodies in Patients with Cancer. L. Hirszfeld and W. Halber.—p. 342.
*Theory of Counterregulation in Liver and in Tissues Against Insulin. F. Depisch and R. Hasenöhrl.—p. 345.
*Effect of Alkaloids on Coagulation of Blood. E. Hartmann and S. Weiss.—p. 347.
Lympogranuloma Inguinale in Relation to Enlarged Inguinal Lymph Nodes. S. Hellerström.—p. 349.
Indications for Surgical Treatment and Methods of Operation in Gynecology. W. Hannes.—p. 351.
Treatment of Multiple Sclerosis with Injections of Gold Preparations. J. Steinfeld.—p. 356.

Cancer Antibodies in Patients with Cancer.—Hirszfeld and Halber succeeded in demonstrating in patients with cancer of the gastro-intestinal tract, uterus or mamma antibodies that fixed complement and reacted with a sufficiently sensitive cancer antigen. A small percentage of the serums gave a positive Wassermann reaction. These positive syphilitic serums reacted also with alcoholic extracts from cancer tissues. The authors explain this as being due to the fact that there are two types of immunity reactions, one an immunity against an etiologic agent and another an immunity against disintegrating tissues that become resorbed. The first form they term etiologic immunity, and the other form is designated as disintegration immunity. It is assumed that the co-reaction is the result of the concurrence of specific and of nonspecific lipoids in the cancer tissues. Serums of pregnant women likewise react with cancer antigens. The authors assume that in these cases there exist antibodies against substances that develop as a result of the growth of the fetus. They think that, in patients with cancer and in pregnant women, these substances are either identical or related. If that should be the case, the reaction with cancer antigens could be considered a growth reaction.

Theory of Counterregulation in Liver Against Insulin.—In former investigations Depisch and Hasenöhrl made observations which indicated that in the liver and in the tissues there functions a counterregulation against insulin. According to Falta's theory, insulin checks the elimination of sugar in the liver and promotes the absorption of sugar by muscle and other tissues. However, the authors assume that the counterregulation promotes the elimination of sugar in the liver and checks the absorption of sugar by the tissues. Following investigations as to which factors constitute the counterregulation, the authors arrive at these conclusions: The assimilatory insulin system with its nervous regulation stands in the center of the carbohydrate metabolism. It promotes the absorption of sugar in the liver and in the tissues. In the liver this system is counteracted by the sympathetic nervous system and the secretion of the suprarenals, of the posterior lobe of the hypophysis and of the thyroid (liver counterregulation). In the tissues the effect of the insulin is counteracted by the suprarenals and by the thyroid (tissue counterregulation). Independent of this hormonal regulation there appears to be also a direct influence of the nervous system on the sugar metabolism in the liver and in the tissues, promoting and checking it. The authors give a diagrammatic presentation of the different processes involved in the sugar metabolism.

Effect of Alkaloids on Coagulation of Blood.—Hartmann and Weiss point out that the normal coagulation of the blood can be retarded by various factors. Because it had been observed by other investigators that cocaine and caffeine retarded coagulation, the authors investigated the action of various alkaloids such as atropine, pilocarpine, strychnine, choline, quinine, nicotine, cocaine, picrotoxin and an isomer of ephedrine. They found that all these substances retarded the coagulation of the blood. Whether blood coagulation is a colloid chemical process or a fermentative process has not as yet been definitely determined. The alkaloids effect a retardation of the coagulation either by catalytic action or by destroying the ferments.

Monatsschrift für Kinderheilkunde, Leipzig

46: 97-192 (Feb.) 1930

*Chickenpox and Tuberculosis. G. Abraham.—p. 97.
Factors Concerned in Increase of Weight of Children in Convalescent Homes. L. von Wikullil.—p. 104.
*Rupture of Alveolus of Lung and Its Sequelae in Nursling. E. Stransky.—p. 109.
*Pirquet Test in Active Tuberculosis. E. Unshelm.—p. 117.
*Changes in Pirquet Reaction in Tuberculous Meningitis. J. Lukács.—p. 125.
*Familial Occurrence of Nephritis in Chickenpox. K. Ochsenius.—p. 127.

Chickenpox and Tuberculosis.—Abraham reports a case of chickenpox in a girl, aged 6, in whom on the second day

following the appearance of the eruption a swelling was noted in the middle of the neck just above and a little to the right of the thyroid. The swelling increased rapidly until it was as large as an apple. Although a careful physical and roentgen examination did not reveal signs of tuberculosis elsewhere in the body, a tentative diagnosis of tuberculosis was made and was confirmed by a positive Pirquet reaction. The swelling was punctured and 20 cc. of a nonfetid fluid was withdrawn. Smear preparations and animal inoculation revealed typical acid-fast tubercle bacilli. Both aerobic and anaerobic cultures of the fluid remained negative. Repeated puncture of the swelling was followed by its gradual disappearance. The author believes that in this case the chickenpox led to an acute exacerbation of a latent tuberculosis of the cervical lymph nodes.

Rupture of Alveolus of Lung and Its Sequelae in Nursling.—To the four cases of rupture of an alveolus of the lung followed by mediastinal emphysema in nurslings reported in the literature, Stransky adds a fifth case in which the mediastinal emphysema was accompanied by pneumothorax and cutaneous emphysema.

Pirquet Test in Active Tuberculosis.—On the basis of his observations in 205 cases of acute tuberculosis in children in whom the Pirquet test was performed, Unshelm states that a conclusion with regard to the activity or inactivity of an existing tuberculosis cannot be drawn from the intensity of the Pirquet reaction.

Changes in Pirquet Reaction in Tuberculous Meningitis.—Lukács reports a case of tuberculous meningitis in a child, aged 2½ years, in whom a Pirquet reaction had been strongly positive early in the disease. On the evening of the day on which the condition of the child suddenly became worse (violent vomiting, loss of consciousness, marked rigidity of neck and decrease in the pulse rate), however, the intense redness disappeared. It did not reappear until after thirty-six hours had elapsed, and it then persisted in its original intensity until the death of the child.

Familial Occurrence of Nephritis in Chickenpox.—Although the occurrence of nephritis in chickenpox has been discussed a great deal in the literature, Ochsenius was unable to find a single instance of the familial occurence of these two conditions. He gives the case reports of two brothers, aged 5 and 8 years, respectively, and their sister, aged 11, in all of whom the appearance of the pustules of chickenpox on the skin was followed by the appearance of albumin, hyaline casts and erythrocytes in the urine. After having lasted for from two to seven weeks, the nephritis cleared up completely in all three cases.

Münchener medizinische Wochenschrift, Munich

77: 261-302 (Feb. 14) 1930

Methods of Treatment in Various Disorders of Thyroid Especially in Exophthalmic Goiter. A. Krecke.—p. 261.
Significance of the Terms Agreeableness and Digestibility. H. von Hoesslin.—p. 263. C'td.
Dengue in Athens in the Fall of 1928. K. G. Apostolopoulos.—p. 265.
Criticism of Szalai's Statistics on Efficacy of Friedmann's Tuberculosis Vaccination. J. Parassin.—p. 268.
*Fencing as Practiced by Students of German Universities Not Life Endangering. O. Muck.—p. 271.
Correction of All Errors of Refraction of Eye by Means of Adherent Lens Worn Underneath the Lids. Heine.—p. 271.
Various Methods for Diagnosis of Pregnancy. E. Vogt.—p. 272.
New Contrast Medium for Use in Roentgen Examination of Urinary Tract. Kielleuthner.—p. 276.
*Practical Value of Roentgen Examination of Arteries. J. Schüller.—p. 278.
*Calcified Pleural Adhesion. H. Naumann.—p. 279.
Electrocoagulation in Cerebral Tumors. H. Olivecrona.—p. 280. C'cn.

Fencing by German Students Not Life Endangering.—Muck states that during the last seven years he investigated the problem of whether injuries of the brain may result from wounds of the soft parts of the head that are contracted by students during fencing. He never observed the vasomotor nasal reflex phenomenon that indicates injuries of the brain in men who had large scars from fencing wounds. From this the author concludes that fencing does not involve great dangers, and that it is therefore not necessary to prohibit this sport by law. He hopes that this old student custom will not be forbidden, because he considers it not only a sport but also an educational factor.

Practical Value of Roentgen Examination of Arteries.—Schüller describes a roentgen examination of the femoral artery. He asserts that in this case the roentgen examination of the artery determined the best operative treatment and thus prevented operations that would not have brought the desired results. The author advises that in case of an injury of an artery the roentgenogram should be made as early as possible. It will then be possible to institute the correct treatment before irreparable conditions have developed. Roentgen examination of the artery did not cause injurious results. The arterial wall is evidently more resistant to halogen solutions than the wall of a vein. A solution of the same concentration, injected into a vein, would probably cause a thrombosis. The author concludes that roentgen examination of an artery is not dangerous and should be done whenever it seems necessary.

Calcified Pleural Adhesion.—Naumann reports the case of a man, aged 67, who complained of pains in the right side of the chest. Roentgen examination revealed a peculiar shadow. At first it could not be determined whether there existed a tumor or a pleural adhesion. Roentgenograms taken in various positions revealed the peripheral location of the process, and symptoms that usually characterize a tumor were absent. A pleural adhesion was probable because the anamnesis revealed that three years previously the patient had had pleurisy. Since then he had had occasional attacks of pain, and it was assumed that they were caused by the gradual calcification of the pleural adhesion.

77: 303-348 (Feb. 21) 1930. Partial Index

Roentgen Irradiation of Ovaries as Cause of Malformations in Offspring. O. Pankow.—p. 303.
Animal Experiments on Efficacy of Serotherapy in Viper Bites. W. Menk.—p. 307.
Relation Between Muscular Dystrophy and Encephalitis. H. Klien.—p. 308.
Clinical Aspects of Psittacosis. Kerschensteiner.—p. 310.
Anatomicopathologic Observations in Psittacosis. S. Oberndorfer.—p. 311.
*Whole Grain Bread. A. Hartmann.—p. 312.
Significance of the Terms Agreeableness and Digestibility. H. von Hoesslin.—p. 314. C'cn.
*Significance of Placental Blood for Maintaining Heart Action in the New-Born. H. Schumacher.—p. 317.
Pseudocure Following Use of an Allegedly Infallible Gallstone Remedy. Drenkhahn.—p. 318.

Whole Grain Bread.—Hartmann advocates a whole grain bread that contains rye and wheat in the proportion of 2:1 and also about 2.5 per cent of potato flour. He asserts that this bread is of excellent flavor, is digestible and retains its freshness for a comparatively long time. The fact that it contains mostly rye is of great economic significance for Germany, since the German climate and soil is better suited to the cultivation of rye than of wheat. The price of this bread is lower not only because rye is a domestic product but also because the bread contains nearly the whole grain. The bran content is of great value because it supplies bulk and roughage for the intestine. The author reviews several reports from the literature that emphasize the great value of roughage in the food. It increases peristalsis and is valuable not only for the prevention and treatment of constipation but also for other digestive disorders, for disturbances of the gallbladder, liver and kidneys, for skin diseases, for some forms of arthritis and for nervous and circulatory disorders.

Significance of Placental Blood for Maintaining Heart Action in the New-Born.—Schumacher reports his observations in a case in which a fetus and a placenta were expelled simultaneously during the fifth month. It was noted that the heart action continued for fifty minutes after the expulsion. The blood in the fetal organism and in the placenta was sufficient to maintain the heart action for nearly an hour. The author assumes that there existed a branchial respiration by means of the placental villi. He concludes that if a child is born in an asphyxial condition, it is advisable to postpone the ligation and the division of the umbilical cord. If in an asphyxial infant the heart is active, artificial respiration should be commenced before the umbilical cord is ligated.

Strahlentherapie, Berlin

35: 391-629 (Feb. 26) 1930

Cathode Rays: Mode of Production and Physics. P. Knipping.—p. 391.
Mechanism of Reaction of Defense and Habituation of Animal Organism to Light. G. Miescher.—p. 403.
Tissue Respiration and Radiant Energy. W. Kollath.—p. 444.
Effect of Ultraviolet Irradiation on Alexin Content of Blood Serum. O. Huntemüller.—p. 489.
*Impetigo Herpetiformis: Roentgen Sterilization. O. Grütz.—p. 501.
*Bone Metastases in Cancer of Mammary Gland: Roentgen Irradiation. A. Beck.—p. 513.
*Cancer of Larynx: Radiation Treatment. L. Halberstaedter and A. Seiffert.—p. 518.
Universal Carbon Arc Lamp in Otorhinolaryngology. G. Osterwald.—p. 523.
*Tuberculosis of Skin: Treatment. W. Frieboes.—p. 528.
Lymphogranulomatosis: Treatment. J. Jacobs.—p. 533.
Dermatoscopic Changes in Normal Skin Following Pressure Irradiation with Kromayer Lamp. M. Popper.—p. 539.
Actinotherapy: Dosimetry. F. Bödecker.—p. 549.
Low Voltage Roentgen Treatment: Dosimetry. M. Schubert.—p. 553.
Determination of Dose and Filtration of Roentgen Rays in Skin Diseases. E. Galewsky and K. Linser.—p. 561.
Results of Treatment with Infra-Roentgen Rays in Dermatology. J. Konrad.—p. 567.
Late Injuries Following Treatment with Infra-Roentgen Rays. M. Monacelli.—p. 581.
Changes in Blood Picture Following Treatment with Infra-Roentgen Rays. A. Böhm.—p. 592.
Institutions for Bioclimatic Research. C. Häberlin.—p. 597.
Ultraviolet Skyshine in Northern Latitudes. F. Dannmeyer.—p. 607.
Criticism of Cadmium Cell. C. Dorno.—p. 612.

Impetigo Herpetiformis: Roentgen Sterilization.—Grütz reports a case in which impetigo herpetiformis developed in a secundigravida, aged 35, during the second month of pregnancy and persisted after labor. A few days after the menses reappeared the condition became suddenly aggravated. The various methods of treatment of impetigo herpetiformis in common use were tried but without success. On the basis of the postmenstrual exacerbation the author performed temporary sterilization by means of roentgen irradiation of the ovaries. The skin eruption disappeared a short time after the irradiation. Following the reappearance of the menses six months later the skin eruption reappeared in a greatly attenuated form, but six weeks later it had completely disappeared.

Bone Metastases in Cancer of Mammary Gland: Roentgen Irradiation.—Beck states that the presence of bone metastases in cancer of the mammary gland does not make the prognosis inevitably fatal. He reports three cases in which such metastases disappeared following roentgen irradiation.

Cancer of Larynx: Radiation Treatment.—Halberstaedter and Seiffert have used Ledoux's method (intratumoral application of radium needles through an incision in the thyroid cartilage) in the treatment of more than twenty patients with cancer of the larynx. In all of them the functional results were extremely satisfactory. In the cases of cancer of a vocal cord it was impossible to tell after treatment which vocal cord had been involved.

Tuberculosis of Skin: Treatment.—Frieboes uses a combined treatment for tuberculosis consisting of intravenous injections of acriflavine base and irradiations with a carbon arc lamp. The acriflavine was given in a 1 per cent aqueous solution in doses of from 5 to 10 cc. two or three times a week shortly before the irradiations with the carbon arc lamp. Although as many as forty injections of acriflavine have been given to one patient, disturbing symptoms have not been noted.

Wiener klinische Wochenschrift, Vienna

43: 225-256 (Feb. 20) 1930

Therapeutic Results with Gonin's Operation in Detachment of Retina. K. Lindner.—p. 225.
*Development and Analysis of Cytolytic Cancer Reaction. R. Willheim and K. Stern.—p. 227.
*Tympanitic Percussion Sound of Skull and Other Peculiarities as Indication of Multiple Tumors of Bones. H. Schlesinger.—p. 232.
*Acetonemic Vomiting in Hyperthyreosis. K. Narbeshuber.—p. 233.
Death Following Blood Transfusion. G. Halter.—p. 236.
Mechanism of Hypertension. F. Sonnenwirth.—p. 238.
Anatomicopathologic Basis of Endocrine Disorders. C. Sternberg.—p. 239.
Roentgen Examination in Disorders of Bladder. M. Sgalitzer.—p. 239.

Development and Analysis of Cytolytic Cancer Reaction.—Willheim and Stern noted that the same carcinolytic substance that is found in the serums of healthy persons may also be found in the serums of patients with cancer. The reason it does not destroy cancer cells in the serum of patients with cancer is that another factor, a cell protecting substance, is likewise active and decreases the action of the carcinolytic substance. The authors investigated these antagonistic forces and plotted them in curves. To a constant quantity of cancer cells there are added increasing amounts of the serum that is to be tested and the resulting cytolysis is plotted. The serum is added in the following proportions: 1:1, 1:5, 1:10 and 1:20. When serums of healthy persons are tested in this manner the curve goes only upward. In the serums of patients with cancer, however, the curve increases if the mixture is in the proportion of 1:5 and 1:10, but if the serum is added in larger quantities, the cytolytic action decreases again, and if the mixture is in the proportion of 1:20 the curve reaches the zero abscissa. The authors see the main characteristic of cancer serums in this increasing and again decreasing curve, but not in the complete absence of the cytolytic capacity. In some serums the cytolysis was entirely missing and the curve remained identical with the zero abscissa. Most of these serums came from women who were pregnant in the eighth or ninth month. None of them were from patients with cancer. The authors noted that the cytolytic substance as well as its antagonist is absorbed by the cells, but the cell protecting substance is absorbed more readily. The more rapid absorption of this substance made it possible to change a cancer serum into one that showed the same cytolytic qualities as a normal serum. Concerning the diagnostic value of these tests, the authors state that among the serums that showed the normal cytolytic action there were none (if the relatively benign epitheliomas of the skin are disregarded) that came from patients with cancer. However, among those serums in which the curve was characteristic of cancer serums there were several from persons in whom the clinical observation did not reveal cancer.

Tympanitic Percussion Sound of Skull and Other Clinical Peculiarities as Indication of Multiple Tumors of Bones.—Schlesinger asserts that metastatic bone tumors are not such rare occurrences as is commonly assumed. In a relatively short time four cases of cancer metastases in the pelvic bones were noted. However, they presented various aspects—disease of the hip joint, sciatica or osteomalacia. In a woman, aged 73, a cancer of the gallbladder led to numerous bone metastases. The author states that these multiple bone tumors are most common in cancer of the mamma. He describes the case of a woman, aged 32, who three years previously had undergone an operation for cancer of the mamma. Gradually numerous bone metastases developed. The cranium was also affected. Percussion of the skull produced a tympanitic sound, particularly in the calvarial region. The author points out that in healthy persons the tympanitic percussion sound may also be produced, but only in the frontal regions and never in the occipital area. Only in cases of multiple tumors of the skull and in osteoperiostitis of the occipital bone can the tympanitic sound be produced on the posterior part of the skull. Tympany in this region is therefore considered indicative of multiple tumors or of other multiple defects of the cranium. Concerning the condition of the blood in bone metastases, the author states that the demonstration of bone marrow cells in the blood stream is possible only in exceptional cases, and is not, as some authors believe, a typical symptom. In some instances of extraordinary dissemination of the tumors it is entirely absent. However, anemia is noticeable in most cases. Cachexia, skeletal deformities and spontaneous bone fractures are usually absent. It is also noteworthy that in patients in whom the bones contain numerous metastases the other parts of the organism are generally entirely free from them. The patient described by the author complained of anesthesia of a region on the chin. It is assumed that this anesthetic zone indicates metastases in the jaw.

Acetonemic Vomiting in Hyperthyreosis.—Narbeshuber first reviews the literature and then reports his own observations. He asserts that in some cases this vomiting has caused death. The secretion of acetone bodies which concurs with acetonemic vomiting seems to him an indication for its patho-

genesis. He thinks that increased and rapid fat metabolism and functional disturbances of the liver cause ketonemia. Increased metabolism and disorders of the liver occur in hyperthyroidism. For the treatment of acetonemic vomiting it is of primary importance to effect a normal functioning of the liver. The glycogen content is normalized by the simultaneous administration of dextrose and of insulin. A 5 per cent solution of dextrose is given in the form of enemas and 10 units of insulin is injected three times daily. When the functioning of the liver is again normal the acute danger is prevented. Beside a limitation of the orally administered foods and fluids, the vomiting itself does not require other treatment. For the therapy of the hyperthyroidism the author recommends roentgen irradiation. At least during the time when the organism is weakened by the continued vomiting, operative treatment is contraindicated.

Zeitschrift für Tuberkulose, Leipzig

55: 465-544 (Feb.) 1930

Sanatorium Treatment of Children with Intrathoracic Tuberculosis. H. Schlan.—p. 465.
*Enlarged Cervical Lymph Nodes in School Children. G. Poelchau.—p. 483.
Mode of Action of Gold Preparations in Tuberculosis. F. Wirz.—p. 489.
*Relation Between Poisoning with Illuminating Gas and Pulmonary Tuberculosis. A. Wolff-Eisner.—p. 491.
Immunization Against Tuberculosis by Means of "Saponified" Antigens. A. von Jeney.—p. 496.

Enlarged Cervical Lymph Nodes in School Children: Pathogenesis.—Poelchau performed the Moro, Pirquet and Mendel-Mantoux (intracutaneous) tests in 100 school schildren with enlarged cervical lymph nodes. In 50 per cent of the children the reactions were negative. Since 50 per cent of all children give positive tuberculin reactions, the author believes that the enlargements of the cervical lymph nodes frequently noted in school children are not caused by the tubercle bacilli but are manifestations either of an infection with other bacteria or of lymphatic diathesis. The condition should therefore no longer be classified as a form of scrofula.

Relation Between Poisoning with Illuminating Gas and Pulmonary Tuberculosis.—Wolff-Eisner describes a case of poisoning with illuminating gas followed by the development of a rapidly fatal pulmonary tuberculosis in which he expressed the opinion as a medical expert witness that the poisoning did not play a part in the development of the tuberculosis.

56: 1-96 (Feb.) 1930

Tuberculous Cavities of Lung: Development, Recognition and Treatment. H. Alexander.—p. 1.
Significance of Contraction of Lung in Region of Tuberculous Cavity. E. Salomon.—p. 21.
*Pulmonary Tuberculosis in Persons with Diabetes. J. Leitner.—p. 30.
Effect of Sputum Autolysate on Tubercle Bacilli. A. Havas.—p. 39.
*Tuberculosis in Tobacco Workers. M. L. Borschtschewsky.—p. 46.

Pulmonary Tuberculosis in Persons with Diabetes.—Leitner explains the frequent occurrence of pulmonary tuberculosis in persons with diabetes on the basis of the fact that the increased sugar content of the blood and tissues and the pharyngitis sicca that is frequently present in diabetes favor the localization of tubercle bacilli in the respiratory tract. Not only the subjective but also the objective symptoms of pulmonary tuberculosis in persons with diabetes are slight. The hypothermia that occurs in diabetes masks the initial subfebrile temperature of pulmonary tuberculosis. The amount of expectoration is slight and the auscultatory changes are not marked. Profuse hemoptysis occurs rarely. The sputum contains few tubercle bacilli because they are overgrown by other bacteria. The erythrocyte sedimentation speed, which is of great diagnostic value in uncomplicated tuberculosis, is only slightly increased in tuberculosis in persons with diabetes. These facts, together with the frequent occurrence of an early infiltrate in such persons, render of great importance the routine periodic roentgen examination of the lungs in diabetes.

Tuberculosis in Tobacco Workers.—On the basis of a statistical study of 1,658 case histories of tobacco workers, Borschtschewsky states that the handling of tobacco does not influence the origin or the development of pulmonary tuberculosis.

Zeitschrift für Urologie, Leipzig

24: 81-160, 1930

Stricture of Ureter: Pathogenesis. S. Brügel and R. Paschkis.—p. 81.
Kidney Diseases: Diagnosis. K. Herman.—p. 86.
*Uremia: Treatment. M. Landsberg and D. Szenkier.—p. 95.
Ulcus Simplex Vesicae: Pathogenesis and Treatment. E. Remete.—p. 99.
*Insufflation of Gas into Bed of Kidney. A. von Noszkay.—p. 103.
Pollakiuria: Differential Diagnosis Between Nervous and Organic Forms. M. Barinbaum.—p. 110.

Uremia: Treatment.—In experiments on animals, Landsberg and Szenkier demonstrated that large quantities of urea may be removed from the organism by means of irrigations of the colon. They believe that this bloodless method of removal of excess nitrogen bodies is indicated in uremia and that it can be used clinically.

Insufflation of Gas into Bed of Kidney.—Von Noszkay describes the technic of perirenal insufflation of gas, which he has used thirty-two times (ten times with air and twenty-two times with oxygen). He states that although the indications for the use of this method of diagnosis are few and although it should be used only after the methods of diagnosis in common use have failed, it is not a dangerous procedure.

Zentralblatt für Gynäkologie, Leipzig

54: 321-384 (Feb. 8) 1930

*Copper Catgut. K. Baisch.—p. 322.
Chronic Inflammations of Uterine Adnexa: Treatment. A. Bauereisen.—p. 324.
Bacterial Content of Nongravid and of Gravid Uterus. M. Gundel and K. von Oettinger.—p. 327.
*Suprarenals: Bilateral Necrosis. K. Tietze and F. Matzdorff.—p. 338.
Anesthesia in Labor: Value of Solution of Secondary Butylbrompropenylbarbituric Acid. H. Goldschmidt.—p. 344.
Solution of Secondary Butylbrompropenylbarbituric Acid as Anesthetic in Obstetrics and Gynecology. J. Putz.—p. 348.
Operations by Vaginal Route. A. Calmann.—p. 353.

Copper Catgut.—During the past year and a half Baisch hes been using catgut impregnated with copper salts in all cases in which he previously used iodine catgut. Copper catgut kills not only pyogenic cocci but even tetanus spores. Mice under whose skin ordinary catgut sutures contaminated with tetanus spores were introduced contracted tetanus, whereas those treated in a similar manner with copper catgut contaminated with tetanus spores did not. One great advantage of the copper catgut is the absence of danger of a secondary contamination of the catgut after the opening of the container. Even after it has been left lying in the open for a long time, copper catgut retains its full bactericidal power. This makes it particularly valuable for suturing.

Bilateral Necrosis of Suprarenals.—Tietze and Matzdorff report a case of fatal bilateral thrombosis of the suprarenal veins and bilateral necrosis of the suprarenals in a puerpera. Although marked asthenia was noted throughout the duration of the disease the diagnosis could not be made clinically.

Russkaya Klinika, Moscow

12: 225-364 (Sept.) 1929

Indexes as Determiners of Constitutional Types. S. L. Gauchmann.—p. 225.
Influence of Morphine on Motor Functions of a Pathologic Stomach. F. F. Bopisenko.—p. 240.
Change in Surface Tension of Urine in Various Infections of the New-Born. J. Basilevitsch and A. V. Tscherkassov.—p. 250.
Change in Surface Tension of Urine After Narcosis. J. Basilevitsch and J. Dmitruk.—p. 257.
*Change in Surface Tension of Urine in Tuberculosis of Lungs. J. Basilevitsch and N. M. Titarenko.—p. 263.
Paroxysmal Hemoglobinuria: Two Cases. E. Liebermann and M. Maisel.—p. 268.
Paroxysmal Hemoglobinuria. M. S. Bragin and G. M. Baschenov.—p. 276.
Tumor of Hypophysis and Liquorrhea Nasalis. A. P. Friedmann.—p. 287.
Changes in Bones and Joints of Spinal Column Due to Tabes. D. A. Markow.—p. 295.
Pseudoperitonitis. V. A. Tarasow.—p. 303.
*Calcium Chloride Iontophoresis in Tuberculosis of Bones and Joints. B. P. Popov.—p. 310.
Function of Testes. A. I. Majnts.—p. 319.

Change in Surface Tension of Urine in Tuberculosis of Lungs.—In examining the surface tension of the urine of patients suffering from tuberculosis of the lungs, Basilevitsch and Titarenko obtained the following results: 72 per cent of

the patients who had had tuberculosis for a considerable length of time had a surface tension of the urine below normal; in only 28 per cent of the somewhat milder cases was the surface tension lowered, and of those having tuberculosis in the primary stage only 9 per cent showed a lowering of the surface tension of the urine. From this it may be concluded that although tuberculosis does affect the renal and other excretory functions, the process is slow and may be remedied.

Calcium Chloride Iontophoresis in Tuberculosis of the Bones and Joints.—In tuberculosis of the bones and joints a large amount of calcium is required to keep up the bodily resistance. Since the blood does not contain the necessary amount of calcium, it becomes necessary to administer calcium artificially. The process of calcium chloride iontophoresis has been found most useful. In ten cases of tuberculosis of the bones and joints under observation by Popov, a marked improvement in the general condition was seen after calcium chloride had been administered iontophoretically. This method is especially recommended in the treatment of children.

Nederlandsch Maandschrift voor Geneeskunde, Leyden

16: 443-499, 1930

*Therapeutic Effects of Multiple Lumbar Punctures on Multiple Sclerosis. A. Gans.—p. 443.
Statistics on an Outbreak of Whooping Cough in a Restricted General Practice. H. Hondelink.—p. 452.
Influence of Ultraviolet Rays on Changes in Skin Pigment. G. O. E. Lignac.—p. 496.

Therapeutic Effects of Multiple Lumbar Punctures on Multiple Sclerosis.—Gans reports with considerable detail the results of repeated lumbar punctures in the treatment of seven patients with multiple sclerosis. A woman, aged 33, had had disturbances due to multiple sclerosis for fifteen years. Her gait was spastic and paretic. After ten lumbar punctures she walked better and the plantar reflex (left) became normal. From his experiences, Gans recommends repeated lumbar punctures in the treatment of multiple sclerosis.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

74: 589-708 (Feb. 8) 1930

Abdominal Tuberculosis. J. G. Remijnse.—p. 590.
Treatment of Urologic Disorders with Electrocoagulation (Diathermy). J. A. Weijtlandt.—p. 598.
Remarks on Pathologic-Anatomic Researches in the Netherlands. R. de Josselin de Jong.—p. 611.
*An Important Difference, in Obstetric Practice, Between an Acute Severe and an Acute Oozing Hemorrhage. H. van der Hoeven.—p. 619.
Is Gold Present in the Brain? J. A. F. Kok and C. O. Schaeffer.—p. 622.
Congenital Esophagotracheal Fistula: Case Report. J. M. Prakke.—p. 625.

Difference, in Obstetric Practice, Between Acute Severe and Acute Oozing Hemorrhage.—Van der Hoeven points out that if an acute severe hemorrhage is promptly overcome, the patient recovers quickly. The prognosis is favorable, even though the general condition at the time is alarming. The less severe oozing hemorrhage that does not stop spontaneously must be treated before signs of serious hemorrhage become apparent, and one must never wait until such signs appear. The pulse and the general condition are very misleading; the only reliable method is to determine the quantity of blood lost. If a patient who is not flowing seriously shows marked signs of hemorrhage, the prognosis is grave. If a patient is losing blood clots instead of fluid blood, it does not indicate necessarily that the hemorrhage is about to cease but merely that the blood has remained long enough in the vagina to coagulate.

74: 709-820 (Feb. 15) 1930

Exophthalmos. J. van der Hoeve.—p. 713.
Metastasis of Tumors. E. C. van Rijssel.—p. 720.
Mortality from Nontuberculous Disorders of Respiratory Organs. J. H. Tuntler.—p. 730.
*Treatment of Pernicious Anemia with Powder of Dried Pig Stomachs. I. Snapper and J. D. G. Dupreez.—p. 745.
Apparent Form of Canopy of Heaven. G. ten Doesschate.—p. 748.
Postvaccinal Neuritis. S. J. R. de Monchy.—p. 755.

Dried Stomach of Pigs for Treatment of Pernicious Anemia.—Snapper and Dupreez report from their experience in five cases that pig's stomach, dried and powdered, was highly effective in the treatment of pernicious anemia. In one patient the hemoglobin content increased with the use of a tablespoonful of stomach powder three times a day, over twenty-four days, from 47 per cent to 67 per cent, and within three weeks, on continuing the treatment, to 82 per cent. In another patient the hemoglobin content rose in three weeks from 50 per cent to 62 per cent, and three weeks later to 95 per cent. Increase in the number of erythrocytes ran parallel to the increase in the hemoglobin content (4,500,000).

Acta Medica Scandinavica, Stockholm

73: 1-87 (Feb. 28) 1930

*Fatal Case of Exophthalmic Goiter Following Thyroid Gland Administration. E. Möller.—p. 1.
Counting Blood Platelets. P. Windfeld.—p. 10.
*Three Cases of Healed Aortic Rupture. Å. Lundberg.—p. 19.
Treatment of Diabetes Mellitus. K. A. Heiberg.—p. 45.
Connection Between the Functional Activities of Liver and Susceptibility of Organism to Insulin. E. Forsgren.—p. 60.
Occurrence of Pernicious Anemia in Four Hospitals in Helsingfors from 1898 to 1927. E. Lindström.—p. 71.

Case of Exophthalmic Goiter Following Administration of Thyroid Gland.—A case of exophthalmic goiter is reported by Möller which manifested itself after the patient had been taking a moderate dose of thyroid gland tablets for a few weeks to reduce her weight. Although thyroid medication was stopped immediately the disease progressed rapidly and in six months terminated fatally. The diagnosis was confirmed at necropsy. A lumbar puncture performed two days before the death of the patient revealed an increased albumin and globulin content of the spinal fluid. The number of cells was normal. The possible importance of hyperthyroidism in the etiology of exophthalmic goiter is discussed.

Three Cases of Healed Aortic Rupture.—Two cases reported by Lundberg represent that unusual type of aortic rupture which heals, and through its position close to the aortic valve causes its dislocation. This dislocation prevents the perfect closing of the valve, so that the usual symptoms of aortic insufficiency arise. In one case the causative agent was probably the rushing of the blood against the aortic valve, and the consequent increase in blood pressure, taking place in the course of a fall on the head from some height fifty-four years before the death of the patient. In the second case the cause was almost certainly an acute, intense increase in the blood pressure during a state of sexual excitement in a patient whose aorta had been weakened by malaria (possibly syphilis). The third case cited is unique in several respects. The healed rupture was located not in the neighborhood of the aortic valve but in the aorta descendens, so that an effect on the valve is unlikely. In the aorta ascendens there was another rupture which was quite recent. This one had produced an intramural hematoma and hemopericardium that probably gave rise to a tamponing of the heart. The cause of this rupture could not be determined.

Ugeskrift for Læger, Copenhagen

92: 203-230 (Feb. 27) 1930

Smallpox and Vaccination. J. Ørskov.—p. 203.
*Investigations on Kahn's New Reaction ("Rapid Method"). H. Boas.—p. 213.
*Kahn's Reaction as Quantitative Method. K. Norel.—p. 215.
*Glycosuria After Insulin Therapy: Case. C. J. Munch-Petersen.—p. 217.

Investigations on Kahn's New Reaction ("Rapid Method").—The Kahn and Wassermann reactions agreed in 93 per cent of 5,361 serums tested by Boas. Of the 2,226 control cases, only one gave a positive reaction by Kahn's method.

Kahn's Reaction as Quantitative Method.—Norel says that the values in Kahn's reaction are in the main equivalent to the hemolysis values in the Wassermann reaction; in both methods the relative decrease in the strength of the reaction during treatment must be borne in mind.

Glycosuria After Insulin Therapy: Case.—In Munch-Petersen's patient with manic-depressive psychosis, treatment with insulin was followed by marked and continued glycosuria, ascribed to the insulin. He believes that control of the urine is indicated when insulin is used in therapy; if during an interval following the administration of insulin for several days continued glycosuria is noted, insulin therapy should be abandoned.